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ABSTRACT

This book is designed to provide a comprehensive and contemporary view of food and nutrition for secondary level students. The activities and text address fundamental nutrition issues in a wide range of disciplines such as economics, government, anthropology, biology and journalism. The following major topics are covered: 1) eating patterns; 2) foods and essential nutrients; 3) nutrition, diet-related diseases, and the life cycle; 4) food and the consumer; 5) the food system and the environment; 6) hunger in the United States; and 7) world hunger. (JD)

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FOOD: WHERE NUTRITION POLITICS & CULTURE MEET

AN ACTIVITIES GUIDE FOR TEACHERS

by Deborah Katz
Mary T. Goodwin, M.P.H.
Preface by Joan Gussow, Ed.D

Center for Science in the Public Interest

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Preface

When the copy for the first few chapters of this book arrived in the mail, I gave them to a high school teacher friend of mine and asked her for a reading on whether the material was pitched right for today's secondary school students. Three days later the manuscript came back with the following note: "Super book! I can't wait to get it!"

I suspect there will be many teachers--in high schools, junior high schools, colleges, and adult education classes--who will agree with that assessment. For here, at last is a book full of instructive things to do, designed for those who have suspected all along that the field of food and nutrition was about something more interesting, more complicated, and more controversial than two handsful of vitamins and minerals, a few exotic deficiency diseases, and four increasingly irrelevant food groups.

Food: Where Nutrition, Politics and Culture Meet is an assertively unconventional food and nutrition book. To begin with, it devotes a minority of its time to didacticism. Forsaking the usual textbook approach--long chapters of information followed by a column or so of "Suggested Activities," "Further Problems," or "Questions for Review"--the authors of this book begin each chapter with a relatively brief exposition on a topic such as "Diet Related Disease," "Nutrition Through the Life Cycle," or "The Food Supply." Then come pages and pages of well-thought-out projects and activities designed to incite students of any age into learning not merely more about the topic at hand, but more about their own abilities to investigate, communicate, and effect change.

The chapter on "Eating Patterns," for example, includes fourteen suggested activities. They range from having students track down the foodways of their parents' and grandparents' generations (through interviews and questionnaires) to having them investigate the role of fast food restaurants in contemporary culture (by surveying the patrons of local fast-food eateries about their attitudes toward, and their reasons for eating there).

While a few of the suggested activities might overwhelm the youngest seventh-graders, most could be carried out, at varying levels of sophistication, by groups aged 10 to 90. Indeed, some of the projects--investigating the food resources available to a community's senior citizens, for example--seem eminently suited to a group of action-oriented Gray Panthers. As these activities suggest, Ms. Katz and Ms. Goodwin's book is, in part, unconventional because it takes very seriously the much praised and much less practiced dictum that real learning is the result of involvement.

There is a second way in which this book is unconventional; namely in the amount of attention it devotes to topics and concerns often glossed over in more traditional food and nutrition texts, topics like the food industry, consumerism, agribusiness, and national and world hunger. The authors suggest in their introduction that "the book is about much more than food." But that observation may be wrong. The point is not that this volume is about more than food--the point is that food has turned out, in our time, to be about so much more than we expected it would be. In the last quarter of the 20th Century, food is about politics and economics, health and human behavior, concern and indifference, power and powerlessness, ecology and morality, growth and its limits. Consequently, this book about food is about all of those things as well.

Food: WNPCM may not satisfy everyone. The sources of information it recommends as background for many of its activities will be taken by some as one-sided or at least as indicative of an "anti-Establishment" stance. In fact, this volume, taken as a whole, tends to be more two-sided than most food and nutrition books, in that the authors usually attempt to lay out both the conventional wisdom of the field on the various issues they treat, and some of the important and unconventional questions which have been lately raised about the economy, viability, humanity, rationality, and sustainability of the existing U.S. food chain.

The principal bias of this book is not toward a single point of view about food or where it comes from. The principal bias of this book is toward investigation followed by action. It aims at nothing less than teaching students to think for themselves about the forces in society that determine both the choices they make and the choices they have available to make. The noted psychologist, B.F. Skinner, has suggested that freedom for individuals can only come when, having analyzed those forces in society which reward--and hence maintain--their own behavior, they learn to change the pattern of reward so as to optimize their behavior for their own and society's benefit.

Optimization of nutrition behavior is called "eating a good diet." Nutrition educators have had little success producing that end result by teaching "nutrition." Under the circumstances, it is well worth trying an approach to food knowledge which attempts to help students understand the political, social, psychological, biological and other forces which control food availability and food habits.

When we teach students "nutrition" and fail to convince them to eat wisely, we have transmitted nothing more than a collection of interesting facts about foods and their nutrient composition which--in the press of other competing facts--will soon be garbled or forgotten. If, on the other hand, we try to teach students to read critically, to ask intelligently, to think integratively, and to act responsibly about food, we may, incidentally, also lead them to make wise dietary choices. If we do not, we will at least have begun to train them into responsible citizenship. We will have led them, in the words of educator Robert Maynard Hutchins, "toward an understanding of what it means to be a self-governing citizen of a self-governing political community." In a world where what we do with food will be an increasingly important political issue, we should be grateful to the authors for giving us a book to help us do that.

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1.

HOW TO USE THIS BOOK

How to Use This Book

Food is an essential human need, an important cornerstone of culture, and the focus of economic and political policies. Yet, while we all need food and exhibit great interest in it, most of us are surprisingly ignorant about it. Few Americans understand the body's use of food, and its need for specific nutrients. Fewer still in this urban nation know much about where food originates, how it is processed, how the revolution in food manufacture and marketing has affected us, and how political, economic and social structures determine who receives food. What understanding we do have of these matters is often cloaked in traditional images, true through most of history, but hardly accurate today. We live with a "new" food chain, shaped by, and itself contributing to, the changes that have occurred in American society. Food is a revealing keyhole, through which we may understand a changing world.

In addition, the study of food is an important area of learning. Guidelines about nutrition, cooking, and food choice will clearly help students obtain a good diet and optimal health. No clearer responsibility could exist for public education. Secondly, the central role that food plays in commerce, culture, politics, ethics, and economics makes it a useful, concrete tool for teaching in these areas. Most students have a familiarity with interest in food that can be built upon to teach concepts about many aspects of society.

This book is designed to provide a comprehensive and contemporary view of food and nutrition. The book provides a wealth of information, an approach that students will enjoy, and the integrated outlook necessary to understand the forces shaping diet, food choice and food availability.

In truth, however, the book is about much more than food. The activities and text address fundamental issues in a wide range of disciplines such as economics, government, anthropology, biology and journalism. Students explore such questions as:

* Does traditional culture survive in today's society?
* What major forces are shaping the future? What might the future be like?
* What skills contribute to one's self-sufficiency?
* To what extent are government and industry responsible for educating and protecting the health of consumers?
* How is government policy made?
* What factors determine the price of a commodity?
* Are the news media (radio, TV, newspapers, etc.) "objective"?
* What is it like to live in one of the world's poor countries? To be poor in America?
* What factors influence our habits and wants? How much does advertising influence us?
* Can we protect the environment and provide necessary goods for large populations?
* How can we assess scientific findings and incorporate such knowledge into public policy? How can citizens participate effectively in policy decisions?

The activities suggested in this book were carefully designed to encourage students to identify and explore these and scores of other issues, learning analytical, problem solving, research, and communication skills at the same time.

The learning style encouraged in this book is an active, inquiring one. Activities stress the development of skills which students can utilize throughout their lives. The book emphasizes several broad types of skills:

* THINKING AND PROBLEM SOLVING. Students are encouraged to integrate facts and concepts for a fuller understanding of issues. Students formulate problems and

assess alternative solutions. Students are aided in critically analyzing information and arguments in order to assess their soundness and accuracy and to identify possible bias.

- COMMUNICATION. Students prepare written and oral reports in order to summarize, analyze and communicate knowledge to others. Various forms of communications are suggested--brief newspaper articles, panel discussions, public service announcements, television and newspaper editorials, flyers, preparation of charts and graphs, etc. These activities support the notion that communicating knowledge can be as important as gaining it.

- SELF-SUFFICIENCY. Several of the activities encourage students to grow, choose, and prepare food. Students learn to cook nutritious, "ecological" meals efficiently, to garden in an empty lot or bushel basket, and to buy a week's food on a restricted budget.

- VALUING. Our underlying values--of which we often are not conscious--shape many of our actions and viewpoints. Students gain skills by identifying and clarifying their values, and examining the actions that result from their values. Clarifying values is important for integrating our knowledge and ethical beliefs with responsible action.

- COMMUNITY INVOLVEMENT. The activities stress the use of the community as a learning laboratory. Students learn about advertising, food marketing, the political process, and historical food traditions by investigating the community in which they live. They learn to collect accurate information from the world around them, rather than confining research efforts to books.

- SOCIAL ACTION. Most education never encourages students to determine appropriate and effective actions which follow from their learning, much less teach the skills necessary for action. The activities in this book encourage students to publicize their research results, thereby educating others; where appropriate, students may form their own groups or work with existing community groups in order to influence public policy.

The purpose of education for social action, according to Fred Newmann, Professor of Education at the University of Wisconsin, Madison, is:

> not to transform... [students] into muckrakers, politicians or crusaders, but to help them develop skills, abilities, attitudes that will make it possible to exercise influence according to whatever style they might choose.... This educational objective stands in clear contrast to the primary objective of conventional instruction in public schools, where the goal...is to help students describe, define, evaluate, explain or analyze reality, but not directly to exert influence on it.

We emphasize the above-mentioned skills, because education should help students to _know_ about the world around them; to _communicate_ their knowledge; and to _use_ knowledge both to enhance their own lives and, when appropriate, to promote policies that serve the public interest. Each of these steps--the knowing, the communicating, the using--require particular skills; rarely do these skills develop naturally. Educational institutions should aid students in both acquiring and effectively utilizing valuable knowledge.

USING THIS BOOK IN YOUR SCHOOL

This book was conceived and written with a variety of uses in mind:

- Activities and text may be integrated into already existing courses. Teachers of food-related courses--nutrition, health, home economics, etc.--can draw extensively on the book to enrich and expand upon the traditional subject matter and teaching methods. Nutrition courses might investigate how poverty and affluence contribute to particular dietary problems; home economics courses might emphasize ecological and economical methods of acquiring and preparing food; health teachers could encourage students to explore how government and industrial priorities enhance or detract from public health.

Those teaching other areas of science and social science--such as history, biology, contemporary problems, anthropology, religion, political science, journalism, etc.--may create entire units focusing on food, or choose activities that are easily integrated into the general course design. For example, a political science course could study the development and implementation of federal and local food programs. A detailed look at these programs would offer keen insight into the political process. Teachers of anthropology could create a unit exploring the foodways of various contemporary or historical cultures; as part of this unit students could conduct first-hand research on foodways in their own community. Biology teachers might design a unit on contemporary social issues related to biology, with students examining public policy concerning nutrition and food safety, controversial areas of contemporary nutrition science, or diet-related disease problems in their own community.

If teachers cannot easily implement such special units, they can easily include individual activities in their courses devoting one, two, or three class periods to food-related concerns.

* Some schools and education centers may choose to create electives, mini-courses (conducted on weekends or during a semester break), or adult education courses related to food. These courses may either integrate the nutrition, politics, culture of food as this book does, or focus on a single area such as "Health and Diet," "Food and Consumer Concerns," "Personal and Neighborhood Food Self-Sufficiency," or "Hunger and Poverty in the Midst of Affluence."

* Individuals or small groups of students can undertake some of the activities as projects within courses or for independent study credit. In keeping with the notion of active, involved learning, we recommend that students be encouraged to learn by doing projects as often as possible. Projects are fun and interesting for students; they simulate the reality of future learning (few students will spend the rest of their lives in classrooms!); and they can sharpen and focus the desire for knowledge and development of skills as few classroom situations can.

* Teachers and students may wish to form a club meeting during or after school hours to do food-related research and projects. One idea is to organize a Stomach Defense League (S. D. L.), which might, among other things, research the quality of food available in the school and in other places, and attempt to insure that wholesome food is available. Or a group may write and distribute consumer fact sheets in local supermarkets; initiate food stamp outreach and other services to the needy; organize a community garden; or set up a local chapter of a world hunger organization.

HINTS ON USING THIS BOOK

The following guidelines will help teachers make the best use of this book.

* Scan the entire table of contents and leaf through as much of the book as possible when looking for information and activities useful for your course. Many of the activities deal with several related issues, and yet are included in only one place. For example, Activity Eight, Chapter 4--"Sugar: A Congressional Hearing"--is included in the Food Supply chapter because it explores the forces affecting government policy in food issues. Yet teachers might easily utilize this activity in a nutrition unit to spark a lively debate on the value of sugar as a food. Likewise, those teaching a consumer unit might wish to include any of the several activities in the book that focus on advertising. Those concerned with world hunger might wish to explore simple lifestyle alternatives presented in Chapter Four--"Food and the Consumer." A thorough scan of the book will insure that teachers find the activities relevant to their course.

Field trips add interest and understanding to almost every topic related to food. Students may not really understand what "processed" food is until they see it processed before their eyes; they better perceive the complexities of food marketing after visiting an urban produce market at its peak of activity in the wee hours of the morning; they will retain "Old McDonald" images of farming, if they've never seen a modern commercial farm. Provide students (and yourself!) with as many field trips as possible to create exciting, informative learning situations.

* This book was designed for a variety of age groups, involved in both classroom and less formal educational situations. Students

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of different ages, living in different types of communities, and participating in varied educational situations, can perform most of the activities as outlined, with the specific focus and the sophistication of results varying according to the group. Teachers may wish to modify, expand, or reduce other activities to suit their group's needs.

* Text, charts and worksheets are provided for teachers and, where possible, for students. We hope that teachers will reproduce useful portions for students whenever appropriate. The text is designed as a clear, simple outline, touching on the most important facts and concepts in a given area. Interested students and teachers may explore the issues in more depth, and from other perspectives, by utilizing works cited in the bibliography as well as other materials.

* Some details mentioned in the text will change over time. Encourage students to research and update facts. In particular, it will be interesting for students to investigate changing legislation. This will help them understand that topics such as food labeling, foreign food aid, federal food programs, etc., are not immutable but are in a state of flux. Citizen action can affect these changing public policies.

* Most of the food-related materials used in classrooms today are supplied by the food industry or are government-industry collaborations. One book (Free and Inexpensive Educational Aids, by Thomas Pepe, Dover Publications) lists 157 charts, booklets, movies and leaflets on nutrition and diet; the food industry sponsors 154 of them. Some of the information is accurate and responsible, some is subtly deceptive, and some is downright laughable. Many teachers, unfortunately, rely extensively on this, the most easily available information, to supplement standard texts. Therefore, we have chosen to fill a gap by providing information and teaching skills not stressed in traditional textbooks and industry promotions. We have used a wide variety of reliable resources and consulted experts and government agencies when necessary to verify the facts included in this book. We have tried to weave these facts into a fair picture of human nutrition and the food system. Still, in order to provide students the greatest depth and fullest perspective on issues, so that they may determine their own viewpoints, we encourage teachers to utilize a wide range of resources from various sources whenever possible. We also encourage teachers to urge their students to appraise all information sources critically. In a world of inexhaustible and often contradictory information, the ability to assess accuracy and objectivity is an essential learning and living skill.

* The books and articles cited as "background information" for each activity were chosen both for their quality and easy availability. We relied throughout on the excellent anthology of articles published for Food Day 1975--Food for People, Not for Profit, edited by Catherine Lerza and Michael F. Jacobson. (The book is referred to as FFPNFP in "Background Information.") This anthology contains brief, readable articles written by experts throughout the nation,covering in some detail many areas discussed in this book. Food for People, Not for Profit also contains excellent appendices, including a film list, a bibliography, and addresses of food-related organizations. The book is available in paperback from your local bookstore or from Ballantine Publishers, a Division of Random House, Inc., 201 East 50th Street, New York, New York 10022 (send $1.95 plus 25¢ handling and postage).

Other books, which we considered central to the content of each chapter, are listed in references for activities and in the bibliography. As much new information is published regularly on food-related issues, we urge teachers to investigate new books and articles as they appear.

* Please help us to improve future editions of this book. Send suggestions and criticisms to The Food Project, Center for Science in the Public Interest, 1755 S Street, N.W., Washington, D.C. 20009.

2.

EATING PATTERNS

Foodways

Human beings throughout the world eat an incredible diversity of foods. Of course, only certain foods are available in particular geographic areas, but beyond the wide scope of foods usually available, our own eating patterns are determined by a combination of personal, cultural and societal influences.

We shall use FOODWAYS to mean the societal patterning of food consumption. Foodways of a society largely determine:

- how food is acquired
- which foods are consumed
- how foods are prepared
- who prepares them
- who eats them and with whom
- when they are eaten, and in what quantity

If we trace through a day's meals, we can easily see these factors in play. Few of us have picked dandelions from our yard and added them to our salads, although they are available, edible and tasty. Dandelions simply are not among the foods SELECTED FOR CONSUMPTION in our society. Many of us eat dinner with our friends or families, but at lunchtime we grab a quick bite alone or with co-workers. WHOM WE EAT WITH has changed since the days when many working people and students returned home at lunchtime to eat a large meal with their families.

Every culture has unique foodways. Within diverse nations like the United States and Canada we find our own mini-universe of varied foodways. Foodways also change over time. If we examine today's patterns and compare and contrast them with those of the past, we realize that change has been dramatic, reflecting many other changes in society at large. New foodways frequently result from sudden or gradual exposure to foreign ways, modernization or economic development.

Sometimes nutritionists or educators try to transform foodways purposely in order to improve the people's diets. In addition, some groups of people and families are attempting a purposeful change of their own foodways in order to adjust to new values and/or situations they have encountered. Some of these changes are sharing of food preparation by men and women, alternating cooking schedules in a household, and relying on natural foods rather than processed foods.

Changes in foodways may have wide consequences. In order to assess changes in foodways we should ask two questions: 1) Does CHANGE improve or worsen the nutritional quality of a person's diet? 2) Does CHANGE affect the maintenance of values that uphold the strength of a society? These questions highlight the two inseparable functions of food: a source of nutrients and a source of personal and group well-being.

Foodways interplay with other factors to finally shape our diets. Both the availability and acceptability of food are important.

Availability is determined by biological/climatic factors and also by the nature of the production, marketing and distribution system. For example, Irish peasants grew oats and wheat for their landlords but had no access to these crops themselves and ate only potatoes. Farmers in developing nations often grow cash crops exclusively for export which are unavailable or very expensive locally. The economic situation of a person or household and the decision of a "gatekeeper" in the household strongly influence which available foods will be served.

There are many personal and cultural barriers to eating all the food available to us. Acceptability of a food depends on personal and cultural associations.

Some foods are considered taboo by an entire group. Few Westerners eat horsemeat, dogmeat, or insects although these foods are nutritious and are widely eaten elsewhere. Many Asians have an aversion (and physical intolerance) to drinking milk; religious Jews and Moslems refuse pork. Food taboos sometimes apply to specific group members (such as infants or pregnant women) or certain times of the year (during religious observances, or prior to major events such as a hunt, marriage, long journey). Taboos may spell out specific details for ritualized slaughter or preparation of food.

Food serves many symbolic purposes. Our likes and dislikes may stem from a conditioned response to a specific food. We associate good and bad memories with eating certain foods: punishment (oatmeal?) or rewards (sweets?). Familiar foods evoke other memories, reminding us of our childhood, a faraway home, old traditions or happy times in the past. Food often serves as an emotional weapon or crutch; we may eat (or refuse to eat) when we are bored, frustrated or wish to relieve anxiety.

Food can serve as a status symbol based on its cost, novelty, "superior" quality, excellent taste, or, in some circles, its home-preparation. Most of us have attended a meal where the host wanted to impress us with the quantity, quality or elegance of the food served. Food is a source of relatedness and communication between people. It may be a means of self-expression for the proud preparer or eccentric eater. Food quite often is simply a source of pleasure, pleasing our senses with its appearance, taste, smell and texture.

Food manufacturers are acutely aware of the personal and cultural factors determining acceptability of foods. In promoting products--both new and old--advertisers often use these factors as a sophisticated tool to influence choice. In a magazine ad, attractive people are shown enjoying a certain product, highlighting the STATUS associated with the product. Or foods are given a name reminiscent of ethnic origins (e.g. "German Black Bread") thus appealing to ethnic memories and romantic association. These ads are difficult to resist, since they manipulate the deeply held associations and meanings of food and eating. They are powerful tools, too often used to promote inferior foods and poor eating habits.

Those concerned with nutrition and with changing people's diets must understand that people eat food, not nutrients. The reasons we eat particular foods are intimately tied in with the nature of the society in which we live, as well as our own personal experiences. As we begin to appreciate the importance of food to our lives, we may take our food choices and foodways more seriously. As we realize how rooted foodways are in our own cultures, we begin to recognize the difficulty in changing them. At the same time we can appreciate more fully the options--of diet and custom--that do indeed exist.

Foodways Summary Chart

SOCIETAL PATTERNS:

* how food is acquired and stored
* which foods are consumed
* how foods are prepared
* who prepares them
* who eats them
* with whom
* when
* how
* in what quantity

WITH A CHANGE IN FOODWAYS, WE MUST ASK:

1. Does CHANGE improve or diminish nutritional quality of a person's diet?
2. Does CHANGE affect the maintenance of values that uphold the strength of a society?

PERSONAL PATTERNS:

- FOODWAYS
- AVAILABILITY
- ACCEPTABILITY

AVAILABILITY:

* physical presence of food in the area (determined both by biological/climatic factors and also by the nature of the production, marketing and distributions system)
* the economic situation of a person or household
* the decision of a gatekeeper to allow the food to be served

ACCEPTABILITY:

* Food Symbolism:
    - conditioned response
    - emotional weapon or crutch
    - familiar vs. strange foods
    - food and memories
    - food taboos and superstitions
    - status symbol: cost, novelty, superior quality, taste, home-preparation
* Source of relatedness, means of communication
* Self-expression
* Source of sensory pleasure

Activity One

Pretest

OBJECTIVE: To evaluate knowledge of and attitudes towards foodways. To initiate an opening discussion of foodways.

BACKGROUND INFORMATION: Gifft, Helen H.: Nutrition, Behavior and Change; Lowenberg, Miriam E., et al.: Food and Man

PROCEDURE:

1. The test is divided into three parts. Part One contains factual statements regarding foodways. The statements in Part Two highlight major foodways concepts. Students should mark statements in Parts One and Two either True or False. Part Three consists of values statements. There are no right or wrong answers. Their purpose, rather, is to help students identify their food-related values and discern what effect these values have on their eating patterns. Students should answer these statements with "I agree" or "I disagree."

2. THE STATEMENTS:

FACTS:

A. Insects have little food value and may actually be harmful to one's health. (FALSE)

B. Meat is the most important food in all cultures. (FALSE)

C. The more a food costs, the more nutritive value it has. (FALSE)

D. When threatened with starvation and hunger in World War II, the Dutch ate tulip bulbs, and the Russians ate cats, dogs and rodents while under seige. (TRUE)

CONCEPTS:

A. Both the availability and acceptability of food determine whether people will eat it. (TRUE)

B. One of the first things immigrants will change is their foodways, because fitting into their new culture in this way will make them feel more secure. (FALSE)

C. Eating meals with friends or family is one of the most important times of togetherness and communication for many people. (TRUE)

D. In order to improve the nutritional quality of someone's diet, it is usually necessary to educate him/her about nutrition only. (FALSE)

VALUES:

A. I love trying new and unusual foods.

B. My major consideration in choosing foods is the nutritive value.

C. I like homemade foods better than the food in restaurants.

D. Certain foods are important to me because of my ethnic, religious or regional background.

E. I will continue preparing these foods when I am older.

F. I eat more when I am bored, frustrated, unhappy or angry.

G. I prefer eating with other people to eating alone.

3. Distribute the Pretest to students and give them sufficient chance to answer the statements.

4. Discuss the answers students give, presenting supplemental material where appropriate and introducing major concepts. In Part Three focus on the different values held by the students and the foodways concepts these are related to. Have students discuss why they hold these values.

Activity Two

Three-Generation Questionnaire

OBJECTIVE: To examine changes in foodways.

BACKGROUND INFORMATION: Gifft, Helen H.: Nutrition, Behavior and Change; Tannahill, Reay: Food in History; Donnelly, Tom : "The New Way of Cooking": FFPNFP

MATERIALS: "Three-Generation Questionnaire"

PROCEDURE:

1. Have students survey their home refrigerator and/or pantry and shelves. DISCUSS: Which foods have special significance in your background, from an ethnic, religious, geographic, social or economic standpoint? What do they mean to you today? (List foods and explain.)

2. Prepare and distribute a "Three-Generation Questionnaire" to students. Have students interview two people--one of their parents' generation and one of their grandparents' generation. The students themselves make up the third generation.

3. Prepare the Questionnaire: Divide the page widthwise into three columns: the first column for the question and the two other columns for the two responses--parents' generation and grandparents' generation. Leave adequate space for responses. Leave space at the end for additional questions that the students generate, or comments from the people interviewed. (EMPHASIZE THAT RESPONDENTS NEEDN'T BE THE STUDENT'S PARENT OR GRANDPARENT BUT ONLY ABOUT THE SAME AGE.)

4. Suggested Questions for Questionnaire:

   A. What foods did you and your family eat when you were young that you don't eat as much of, or at all, now?

   B. Where did you get your food? (Response should be specific: supermarket, small store, farmers market, home garden, individual farmer, hunting and fishing, wild plants, milkman?)

   C. Who prepared the meals? With anyone's help? How much time did the cook spend on meal preparation?

   D. Were there people in your town or neighborhood who ate much differently from your family?

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E. How often did the whole family eat together? Were mealtimes different then?

F. What days of the week or year did you eat "special" meals?

G. What major changes have occurred in food technology since you were a kid? What kinds of gadgets or new foods have become available?

H. Did you eat any foods in order to cure illnesses or injury? Which ones?

I. Did you avoid eating any foods because they were believed to cause illness or injury? Which ones?

J. Are you fond of any food because it reminds you of places, things or people of the past?

K. Do you eat any foods today that seemed strange or unappetizing when first introduced to you?

L. What foods or types of food did you particularly cherish when you were young? What foods were considered "fancy" or "special"?

M. Do you think foods are better or worse today?

O. What changes in food and foodways do you appreciate? What changes do you regret?

5. Have students answer survey questions themselves after conducting the two interviews.

6. Have students write a response to each of the people they interviewed. What is the most important thing you learned about foodways in other times? What are the major changes that have occurred in this person's lifetime? What other things would you like to know about foodways that you didn't get to ask? How do the survey and the new things you learned from it make you feel about your own foodways? Based on past changes, can you anticipate future foodways?

7. Have students form small groups to discuss their results.

Activity Three

The Foodways of Other Societies

OBJECTIVE: To demonstrate the importance of foodways in shaping diet. To identify food consumption patterns determined by culture.

BACKGROUND INFORMATION: Gifft, Helen H.: Nutrition, Behavior and Change; Lowenberg, Miriam, et al.: Food and Man; Pyke, Magnus: Food and Society.

MATERIALS: Copies of Foodways Summary Chart.

PROCEDURE:

1. Foodways Passages:

A. FOOD TABOOS

(In one culture) an undernourished wife (gives) the lion's share of meat to her husband to make him strong. This belief comes from remotest history. The Abipones of Paraguay eat jaguars, bulls and stags to make them strong, brave and swift--and avoid eating hens and tortoises for fear of becoming cowardly and slow; the Miris of Assam prize tigers' flesh to make themselves fierce--but forbid it to the women; the Kansas Indians relish dogs' flesh on the grounds that by eating it they become brave and faithful. Caribs abstain from pigs' flesh lest their eyes become small, and the Aino people of Japan, who believe the otter to be a forgetful animal, refuse to eat it lest by doing so they lose their memory. These are just a few of the tribal beliefs about the magic of foods.

The dogma of the West...is that our dietary habits are based on reason; it is only remote foreign tribes which believe in taboos. We deceive ourselves if we forget that we too are heirs to such an inheritance just as other communities...(for example) certain articles of diet--particularly meat--are considered to be masculine, and others feminine, regardless of the similarity in the nutritional needs of the two sexes. Yet another...factor affecting eating is the use of special foods as badges of social status. Smoked salmon implies social superiority, cow heel and tripe are attributes of the lower castes....

From Pyke, Magnus, Food and Society,
John Murray Ltd. London, pp. 10, 11.
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B. FOOD CUSTOMS OF NEW CANADIANS: PORTUGUESE IMMIGRANTS

FOOD CUSTOMS IN COUNTRY OF ORIGIN:

Meal Patterns: Light breakfast, lunch at noon, tea at 5 p.m. and a late meal (supper) anytime from 7 to 9 p.m.

Lunch and supper consist of soup and two main dishes (one fish, the other meat) for high income groups. Dried or fresh fruit for dessert and sometimes jam or marmalade.

Cooking Facilities: Low-income families do not have ovens and their food is cooked at communal bakeries, usually once a week. Wood is the common fuel in the country although some have petroleum stoves. Flour is bought from windmills and some families provide their own wheat for grinding. A few areas still have no electricity or heating and obtain water from central fountains.

In the cities, the average home is equipped with bottled gas. Aluminum utensils are replacing iron and tin ones. The housewife generally goes to the nearby markets once a day....

FOOD CUSTOMS IN THE TORONTO AREA:

Meal Patterns: Three meals a day resembling Canadian pattern. A quick breakfast, light lunch and evening dinner is usual. Coffee between meals for adults and milk with chocolate for children. Less time spent cooking....

C. A ZULU TRIBE

In 1940 some Western-trained scientists tried to improve the diet of a Zulu community living in a "native reserve" in South Africa. The infant mortality rate in this community was 276 per 1000. (The rate in the U.S.A. in 1975 was 18/1000.) In addition many people bore diseases attributable to poor nutrition. Among them were pellagra (due to a niacin deficiency) and kwashiorkor (protein deficiency).

A survey found that in one group of Zulus the main food item was maize (corn), sometimes supplemented with dried beans, a little milk, and very occasionally, some meat or vegetable. In the right seasons, they ate potatoes and pumpkins, and they drank millet beer year-round. This diet was influenced by the outside only when members of the community, working in faraway gold mines and factories of South Africa, sent home as gifts refined maize meal, and money, with which mothers bought sugar and white bread. This was the diet of the mothers whose children often died as infants or who developed nutritional diseases such as kwashiorkor.

Maize is very low in certain nutrients, and deficiencies often result from relying on it as a staple food. When the western scientists tried to explain that poor diet caused the ill health and death, the people could not understand. They attributed the problems to displeased gods, spirits and forces. Besides, their ancestors, who had been strong and powerful people, had eaten the same foods!

The scientists studied the history of the Zulus and found that, far from being the traditional food, maize meal had only been introduced into the diet of the Zulus by European settlers. Before their arrival, the people ate millet as the main cereal. More important than this, they had been a roving, pastoral nation possessing large herds of cattle, and eating meat. Milk had also been an important ingredient of their diet; no meal was complete without milk. In the past the land had provided wild game, roots, berries and green vegetables. Some of the old people in the tribe remembered this, and the Zulu community began to accept the scientists' findings.

D. AN ESKIMO FAMILY

All day long, the wife is busy scraping skins or softening them by chewing for the manufacture of boots. Or she is sewing fur clothing, tent covers of skins, or kayak covers. Between the tides, she must collect seaweed and clams, and perhaps char, a delectable Arctic sea trout. She may prepare one warm meal a day, normally seal meat, which she cooks in a pot over the slow-flickering flames of a seal-oil lamp. This meat is eaten with the cooking water as soup, seaweed and seawater serving as seasoning. After this one meal, the family will nibble for the rest of the day. There may be a piece of muktuk, char, or a shank of half-frozen caribou meat, all raw.

Now it is the mid-1960's. Our family has moved to the construction site of a defense installation and airstrip. The husband and son have found work there. They eat three meals a day in the cafeteria. The richness of those meals shows in their bulging paunches. They live in a shack which they constructed themselves, but later they will move into a three-bedroom house with oil heat and electricity, built with a hefty bit of government help.

Government-sponsored stores, or those of the Hudson's Bay Company, sell them clothes and food. The women while away their idle hours chewing chocolates instead of animal skins, attending movie shows and drinking Cokes and other sugared soft drinks. There is little else for them to do. They no longer need to sew and make clothes or scrounge for food. The flavor of the communal life of a nomad family has departed, so there is little to gossip about.

And the chewing of meat--even more so of bones--which used to be an invaluable source of minerals, particularly for the...pregnant or lactating mother--has become painful or impossible due to the Eskimo's rapidly rotting teeth.

Of course, not all Eskimo families have been subject to such changes of activity, housing and above all, nutrition, but it is a fact of life for most....

From Schaefer, Otto, "When the Eskimo
Comes to Town," Nutrition Today, Vol. 6,
No. 6, 1961. Reprinted by permission.

E. EATING INSECTS

L. Thon, reporting from what was at that time the Belgian Congo, describes the well-organized system by which the local inhabitants caught termites, some of which they cooked and ate fresh, some of which they prepared for the market. This they did by drying them in the sun and then lightly frying them. In the month of May fried termites formed a lively article of trade in the town markets. A special variety of these insects, the denge-termites, may either be eaten directly or used as a source of colourless oil of good quality, excellent for frying. L. Thon...purchased samples of the brownish, fried aromatic-smelling termites offered for sale in the market and analyzed them. He concluded that the analysis of 561 calories per 100 g., 36% of protein and 44% of fat was superior to most other animal foods.

Under normal circumstances, the average...inhabitants of Europe and America will refuse with disgust any offer of insects.... This conspicuous aversion is a prejudice acquired incidentally to the progress of civilization. It falls into the same category as the prejudice against raw meat and raw fish, and against eating frogs, oysters, and crayfish.... As food supplies became more plentiful and more certain, one after another the nuts and roots, small wild game, wild leaves of diverse kinds--and insects as well--were, first of all, less highly prized, and then, not being customarily eaten, became taboo.

From Pyke, Magnus: Food and Society,
John Murray Ltd., London, 1958, pp. 40, 41.
Reprinted by permission.

F. IN APPALACHIA

My dadie raised the stuff we lived one he groed the corn to make our bread he groed they cane to make our syrup allso groed they Beans and Peas to make the soup beans out of and dried leather Britches beans and dried fruit enough to last all winter he Killed enough meat to last all winter.

he Killed a beaf and a Sheep and two or three hogs for the winter he diden have mutch money for anything we just had our biskets for sunday morning and when mother ran out of coffie she parched chustnuts and ground them one her coffie mill to make coffie out of and when it rained and the mills coulden grind our bread we ate potatoes for bread

From Wiggington, Elliot, ed., The Foxfire
Book, Anchor Books, pp. 15-16.

2. This activity should be preceded by a discussion of foodways. Pass out the "Foodways Summary Chart" (see Introduction to this chapter).

3. Discuss the passages. Determine aspects of foodways described in them. Many of the passages focus on a change in people's foodways. How did the change occur? What affect did change have on the people? In what ways was the change good? In what ways was the change bad? Compare and contrast foodways described in the passages with each other and with American foodways.

4. Ask students to collect folktales, proverbs, etc. from various cultures as indications of foodways. Are there any patterns apparent? What beliefs and teachings are most universal? Which are most unusual? Compare the proverbs to modern advertising slogans, the "poplore" of our culture.

Activity Four

Ethnic Foodways

OBJECTIVE: To investigate the diverse foodways of ethnic groups in one's community; to assess the changes in foodways for these groups; to assess the adequacy of food and food services available in the community. To understand and appreciate the expression of foodways through festivals and celebrations.

BACKGROUND INFORMATION: Lowenberg, Miriam E.: Food and Man

PROCEDURE:

1. Communities offer a variety of opportunities to observe and understand ethnic foodways. Below are several methods of investigation.
2. Have students check at home, at the local library or at a bookstore for ethnic cookbooks. By checking recipes and the introductory information in the book, they may gain understanding of ethnic foodways. DISCUSS: What foods seem most important in this country's cookery? Do you think the ingredients for these foods are available in the United States? How are these foods different from those you eat? Would you like to try them? Are there stories or festivals associated with favorite foods? Do cooks seem to take a lot of care and trouble with the food they prepare?
3. Many communities have ethnic stores, food factories or restaurants. These are good places to interview ethnic members of the community, and to experience and enjoy ethnic foodways firsthand. Have students ask storeworkers and patrons about the origins, meanings, and traditions associated with various foods. Encourage students not to confine their questions to the foods sold, but to ask the ethnic members of the community questions about their adaptations to American foodways: what changes they have made, what new things they like, what foods they do not like to eat, what special problems they have with the food available and with American customs?
4. Encourage students to attend ethnic festivals held in the area; food is often served at these occasions; have students interview persons involved in the festival, or in food preparation.
5. Any of the above sources may help students learn about the food symbolism which is an important part of every culture. Festivals are central occasions in the life of people and cultures; breaking bread together has been a sacred and joyous occasion in most societies. Students can plan an ethnic or multi-ethnic festival, with emphasis on the history and background of the festival's traditions, and on the changes these traditions have undergone in a new land.
6. If students do not wish to concentrate on one ethnic group, choose an occasion celebrated by many: spring festivals welcoming a new year of growth, or harvest festivals in the fall. (ONE CLASS MAY WISH TO PLAN THE SPRING FESTIVAL, CELEBRATING THE PLANTING OF CROPS FOR THE SUMMER, AND INVITE ANOTHER CLASS, WHICH WILL PLAN A FALL HARVEST FESTIVAL.)
7. Encourage students to create their own day of celebration, incorporating traditions of the past or of ethnic groups, or inventing rituals of their own. What day of the year is particularly important either in terms of an event in their own lives, or because of some meaningful historical or contemporary event? What foods and cere-

mories would make this day of celebration more meaningful and more fun? Have students write an account to share with the class: their reasons for picking the day, the historical background, traditions and customs to be observed, food to be prepared and why.

8. Encourage students to observe their special day with family and/or friends.

Activity Five

Cooking a Special Food

OBJECTIVE: To identify foods that have special personal or cultural meaning.

PROCEDURE:

1. Have students bring in a recipe that has special meaning to them. (A recipe passed down through the family, a recipe with a funny story attached to it, an ethnic recipe, a regional recipe, a favorite childhood recipe, a holiday recipe, a new favorite).
2. At each class meeting, have a few students discuss their recipe and the special meaning it has.
3. As often as possible, have the class try cooking one of these recipes.
4. To raise funds for a worthy food-related project, duplicate a collection of the recipes and stories. Have students illustrate and sell books in the community.

Activity Six

Foodways and Advertising

OBJECTIVE: To determine how advertisers use associations with foodways to sell their products.

BACKGROUND INFORMATION: Packard, Vance: The Hidden Persuaders, pp. 83-89; Donnelly, Tom: "The New Way of Cooking," FFPNFP.

MATERIALS: Old and new newspaper and magazine ads; "Foodways Summary Chart"

PROCEDURE:

1. Select several advertisements, preferably from both old and new magazines or newspapers in which advertisers evidently are associating their product with some aspect of Foodways. (EXAMPLES: The ad pictures a bottle of maple syrup besides the makings of apple pie on a very quaint, country-looking porch, with the front door just a bit ajar and welcoming. This associates the syrup with homemade foods, childhood memories, small town living. In another ad, a family is shown eating corn on the cob in the midst of a spectacular western scene and the copy reads, "That old country feeling...." The ad associates the product--margarine--with country cooking and family togetherness. A third ad pictures an attractive and stylish couple eating spaghetti by candlelight. The message is that this brand of canned spaghetti is an elegant, high-status dish.)

2. Discuss with the class the aspect of foodways being demonstrated in each ad.

3. Ask students to survey advertisements in old and new magazines and newspapers for ads which demonstrate an aspect of foodways. DISCUSSION QUESTIONS: What mood does the ad evoke? What places, people, things, time or mood does the ad associate with its product? What specific words or images convey key messages in the ad? Does the mood and message of the ad correspond to your own feelings about the product? In what ways do ads of past and present differ? Would ads of the past succeed today in persuading us to purchase products? Why or why not? Does the ad correspond to your own feelings and knowledge about the product? Examine labels or packages from advertised products. How do they compare to traditional recipes? (For example, many brands of "maple syrup" contain little or no actual maple syrup, only sugar water, yet their ads evoke the mood of the authentic product.) A FRESH AND CRITICAL EYE IS A NECESSITY WHEN EXAMINING ADVERTISING--SOMETHING WE HAVE GROWN UP ON AND USUALLY TAKE FOR GRANTED. ADS ARE EXTREMELY COSTLY UNDERTAKINGS AND NOTHING IN THE PICTURE OR COPY IS THERE BY ACCIDENT.

4. Have students create their own ads. Ask them to use their understanding of foodways to design an effective ad for the food product of their choice. What words and images would they use? Who would they direct the ad towards? Where would the ad appear (specific TV program, specific magazine or newspaper section, billboards, specific radio show)? (ENCOURAGE SOME STUDENTS TO CHOOSE WHOLE, NATURAL FOODS FOR ADS, WHILE OTHERS USE HIGHLY PROCESSED, "GIMMICKY" FOODS.)

Food in History

We can trace changes in food choice and food availability through history. The state of technology, the ecology of the area and social and economic institutions form a pattern which determines the availability and acceptability of food in different eras and different places. By examining changing patterns, we gain a new perspective on the food we eat today, as well as the foods of history.

Walking into a supermarket or school cafeteria, or our own kitchen, we witness the results of historic and cultural change. The foods we eat and take for granted come to our table from every part of the globe, often through complex and interesting chains of events. Buying our oranges in the supermarket, we rarely reflect on their origins in the sunny orchards of Southeast Asia; nor are we aware of the long journey the ordinary potato has made from the cold mountains of Peru to Europe, first to Spain, later to Britain and Germany, and only back to North America when English settlers brought it to Virginia. Our beef cattle are the descendants of a wild European beast which disappeared during the 19th century; today's lazy pigs roamed the Middle East in ancient times scavenging for acorns and other seasonal food crops.

Foods have arrived at our table from all parts of the world; the availability of these foods as well as vast changes in their form, taste, appearance and texture have been the result of many technical changes through history. Some of these changes, such as sanitation practices or methods of food preservation--affect the food itself, while others, such as new forms of transportation, make foods more rapidly and widely available. Many of these changes have meant nutritionally adequate diets for more people. Other changes have created highly processed and conveniently marketed foods (the hard tomato, iceberg lettuce) which may be easy to use and transport, but have considerably less nutritional value than the food they replaced.

Evidence on past eating patterns is scanty at times. It is valuable, however, to attempt to recreate foodways in order to understand that hidden side of history lived by so many people, and so often neglected by textbooks--what was it like living in Ancient Egypt, China's Ming Dynasty, or Britain's Industrial Revolution? The transport and transformation of food; the changes in society and technology which shape different diets; the growth of industry and its increasing influence on our diets; the search for sufficient food by both rich and poor, are often the slighted bits of history which give so much insight into the quality of life. What can we learn about our own era by looking at the determining forces of the past? What kind of future can we expect? Most of us take for granted the status quo, failing to see present foodways as only one moment in vast stretches of time, changing in directions that we can, perhaps, predict, and if necessary, redirect. The seeds of the future lie in the past and present, and in our understanding of the forces of change.

Activity Seven

Food Origins

OBJECTIVE: To investigate the geographic origins of today's foods. To trace the process by which these foods became available and acceptable for consumption.

BACKGROUND INFORMATION: Lowenberg, Miriam E.: Food and Man; Hays, Wilma and Vernon: Foods the Indians Gave Us; Tannahill, Reay: Food in History; Lehner, Ernst and Johanna: Folklore and Odysseys of Food and Medicine; Trager, James: The Food Book; Encyclopedia entries.

RESOURCE PERSON: A science teacher or USDA representative to speak on horticultural development of foods.

PROCEDURE:

1. Have students choose a food from those they've eaten that day, or a locally grown crop. Have each student trace the origin of this food or its ingredients and place a marker on the appropriate place on the map. (SOME FOODS HAVE PARTICULARLY INTERESTING HISTORIES AND HAVE GREATLY INFLUENCED HISTORY AT TIMES. STUDENTS MAY WISH TO PICK ONE OF THESE ITEMS TO REPORT ON: BREAD, BEVERAGES--coffee, tea, beer, wine, milk--POTATOES, SUGAR, CORN, SPICES.)
2. Students should also investigate the history of the preparation and distribution of the food. Has the food itself changed a great deal since it was first eaten? Has its availability changed significantly--i.e., the geographic area where it is now eaten (CORN, A NEW WORLD CROP, IS NOW WIDELY EATEN IN AFRICA) or the type of people who have access to it (WHITE FLOUR WAS ONCE AVAILABLE ONLY TO THE UPPER CLASS)? What social or technological changes have resulted in wider availability?
3. Have students make brief presentations to the class. Encourage questions and additions by classmates.
4. Prepare a bulletin board with a world map, and pictures and facts concerning food histories.

Activity Eight

Historical Character

OBJECTIVE: To visualize foodways of other eras. To determine the relationship between foodways and other aspects of society.

BACKGROUND INFORMATION: Tannahill, Reay: Food in History; Lowenberg, Miriam E. et al.: Food and Man.

MATERIALS: "Character Questionnaire," "Foodways Summary Chart"

PROCEDURE:

1. Ask each student to develop a fictional character representing a specific period in history using a Character Questionnaire. The questionnaire should include this basic information:

   AGE
   SEX
   CLASS (SOCIAL-ECONOMIC LEVEL)
   FAMILY (SIZE/CHARACTERISTICS)
   HISTORICAL PERIOD
   LOCATION (URBAN/RURAL)
   OCCUPATION/ROLE

   (SAMPLE CHARACTER PROFILE: "Pierre is 22 years old, living in the city of Paris, France, during the French Revolution (1789-99). He is an apprentice to Mme. LeFarge in a local scarf factory. Because his father has been arrested and imprisoned, Pierre is supporting his grandmother, ailing mother (TB), and his 15-year-old sister.")

2. From the Character Questionnaire, ask the student to write a more detailed description of the daily routine of the character. Settings developed could include the economical, technological, political, and environmental conditions. Be sure to include the "meals" eaten, and the equipment and utensils used. Describe the source of food, and who prepared it.

3. Ask each student to write a similar description of himself.

4. In groups of four students, compare and contrast the different questionnaires. Compile three lists of the ways in which availability, standard of living and culture affect the consumption patterns of each character.

5. After the group lists have been completed, have the class pool their ideas. Compile a master list of the ways in which these three factors influence the foods that are eaten. Use "Foodways Summary Chart" to guide discussion.

--Reprinted from "Protein Power",
Massachusetts Department of Education,
Bureau of Nutrition Education and School
Services, Boston, Mass. 02111

The American Way of Eating

The European settlers who came to America found a vast area sparsely inhabited by native Americans and a generally favorable climate (temperate to semi-tropical) widely adaptable to a variety of crops. The soil was fertile, graced with a variety of native, cultivated plants (corn, several species of beans, sweet potatoes, squash, chili pepper, and pumpkin) and freely roaming wildlife. Icefree ports at both oceans and navigable rivers and inland lakes made trade convenient. Potential energy sources--water, wood, coal and oil--were abundant.

Generally, the Native Americans did not have great physical impact on the natural environment; their foodways were usually in harmony with it. On the other hand the European settlement has had tremendous impact on this continent, in a relatively brief time. Contemporary food consumption patterns in America are little related to the natural environment and its resources.

The natural environment of the North American continent, the foodways brought by immigrants, extensive and rapid technological changes, and the growing power of big business have all shaped today's way of eating. Some of the technological changes most responsible for transforming our eating ways are:

- AGRICULTURE: Modern mechanized farm machinery (such as the McCormick reaper, invented in 1832, and the tractor) which opened new lands and made farming less labor-intensive; the Land Grant College Movement (the Morrill Act in 1862 directed the offering of instruction in agriculture and mechanical arts, including home economics at land grant colleges); introduction of improved, faster-growing genetic strains of crops and livestock.
- FOOD SCIENCE AND PROCESSING: Louis Pasteur's discovery that microbes cause food spoilage, and the process of pasteurization; publishing and mass distribution of cookbooks; canning, freezing and chilling processes for food preservation.
- HOUSEHOLD APPLIANCES: The wood-burning stove, followed by gas and electric stoves; the refrigerator; the many other household appliances which speed the preparation of food (mixers, blenders, toasters, etc.).
- ENERGY: gas, oil, and electricity as energy sources, powering every step of the new food chain from field to table.
- TRANSPORTATION: The railroad, followed by trucks and airplanes, for food transport; the auto which changed consumer buying patterns.
- ADVERTISING: Radio ads, TV ads, newspaper ads, billboards, influencing consumption patterns and communicating a desired and uniform way of life to millions throughout the nation.
- PACKAGING AND HANDLING: Availability of new packaging materials (aluminum, steel and plastic) suitable for distant transport and prolonged storage of food; freezing and other handling procedures that make long distance transport possible.

These technical changes coupled with cultural and social change have produced radically different eating patterns. The social changes are too vast and complex to unravel fully in this book. Most of them, though, result from industrialization, urbanization and new roles for women.

Agricultural mechanization shifted much of the population from rural to urban areas. Since 1935, there are 60% fewer farms, and many of the skills of food self-sufficiency have disappeared as well. Some feel that many cultural values were sacrificed for growth, efficiency and comfort. Most Americans today are city dwellers or suburbanites, producing little, if any, of their own food. They depend on the food industry to supply not only staples for them, but also highly

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processed foods requiring little home preparation.

Americans now expect to spend less time working around the home to feed and clothe themselves, due to expansion of transportation, of media, entertainment and recreation facilities and of leisure time itself. Each member feels the demands of social and work responsibilities outside the home. Strongly-held traditions which formerly defined the roles of family members and times of family togetherness have eroded. No longer a major event of the day, meals are more and more a necessity stuffed in between other pastimes.

The interest in "convenience" foods began early in this century, and has accelerated greatly in the last few decades. From the beginning, manufacturers stressed that their products offered "liberation" from "kitchen slavery." Washington Post columnist Tom Donnelly wrote,

> ...TV food commercials are industriously promoting the idea that almost any kitchen maneuver a step or two up from water boiling is tremendously difficult, laborious and almost impossible to bring off without the combined skills of a Houdini and an Escoffier. That's why the housewife should bow down and venerate those frozen food producers. They are magicians saving her from brain fever and an early grave....

And taken one step further, what could be easier than eating out at a restaurant, or easier yet, cutting down time and purchasing food at a fast food restaurant? By 1980 it is estimated that 50% of meals will be eaten away from home.

Our leisure patterns, like so many aspects of American life, must conform to a fast-moving, energy-intensive lifestyle. The pleasures of carefully preparing food together and sharing both food and conversation with those around us have too often been sacrificed for the illusory liberation of convenience and speed.

Food manufacturers and advertisers suggest the need for, then reinforce, these beliefs. Ads encourage us to try the novel, the newest, the "funnest," and especially, the easiest food available. Many of our food choices--where to eat, when to eat, and with whom--are suggested directly or subliminally by billboards, magazine photos, or TV and radio advertisements. Instead of choosing food on the basis of time-tested traditions and knowledge, as well as new education, we buy the familiar brands or "exciting" new products most heavily promoted by the food industry.

Certainly the need for food convenience is undeniable with today's busy lifestyle. Time-saving inventions and food processes have saved many, and especially women, from hours of work in the kitchen. Yet it seems easier to incorporate expensive new gadgets and processed foods than new lifestyles; "convenience" foods are not the only way out of this bind. Shared responsibility and simple food preparation, judiciously using labor-saving devices and wholesome foods, are viable options that no one advertises. Meals that provide families and friends the opportunity to share thoughts, experiences and plans compensate for extra time and care required. The superior taste and nutritive value of unprocessed foods can make the American meal the valued time it should be.

Activity Nine

Our Town's Way of Eating

OBJECTIVE: To trace changes in food consumption in the student's own community, and to publicize the results to the community.

RESOURCES: Local library, Historic Society, Regional Branch of the National Archives (see Resources, Activity Eleven), Historic Collections, Historic Preservation Societies, the Town Clerk (for land records), long-established stores and industries.

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PROCEDURE:

1. Have class compile a booklet of the history of your area's food. Interview old timers, check agricultural records and the records of old stores, local newspapers, geography of the area, and reports of native Americans, early settlers and later immigrants. Small groups should have responsibility for each area.
2. Determine a scheme for selling the booklet to the people of your community, using the proceeds for worthy, food-related projects.

Activity Ten

Piecing Together the Foodways Puzzle

OBJECTIVE: To reconstruct foodways of another era.

BACKGROUND INFORMATION: Earle, Alice M.: Home Life in Colonial Days; Harrison, Molly: The Kitchen in History; Hays, Wilma and Vernon: Food the Indians Gave Us.

RESOURCES: Local Library, Local Newspaper, State or Regional Tourist Offices, Historic Preservation Society, University History Department

PROCEDURE:

1. INTRODUCTORY COMMENTS: At a restored mill in Ohio an annual festival is held with old fashioned apple cider and apple butter making, and grain threshing. In Chicago's Museum of Science and Industry a walkthrough model of "Main Street--Turn of the Century" contains a restaurant, general store and dairy shop. Many natural history museums have extensive displays of pottery and other cooking, farming and hunting artifacts from the ancient civilizations of Africa, Greece, China or North America. A farm in Minnesota has been restored to its 1854 condition, when it was the home of German immigrants. THERE IS SOMEPLACE IN YOUR COMMUNITY OR A NEARBY COMMUNITY WHICH CAN HELP TO BRING THE FOODWAYS OF THE PAST ALIVE.
2. Some suggestions for field trips are:
   - * Museums: Natural history, History, Anthropology and Culture, Science and technology
   - * Historic Houses/Historic Villages
   - * Model Farms
   - * Restored Mills
   - * Old Houses: Even if they are not preserved, find one in area and see if you can arrange a tour in exchange for a small service, such as collecting leaves, cutting grass, or other yard work.
3. For further ideas, contact Resources in your community.
4. Visit a historical site or museum in your community. (If feasible, plan a few field trips--or one trip with several stops in order to compare and contrast the foodways of different periods, places and people.) If tours are offered, notify the guide that you are particularly interested in foodways and how they fit into the lives of those who lived or worked at the site you visit, or with the museum objects displayed.

5. At a historic site: Have students carefully observe the design and placement of rooms, the location of buildings in relation to the surrounding land, the storage, cooking and eating spaces. What aspects of foodways can be pieced together by the observations? Ask each student to be a historical "detective" during the visit and identify at least one "clue" to the foodways and food preferences of the people who lived in or worked at the site. (EXAMPLE: A large dining room table: means the family enjoyed eating meals together.) Collect "clues" and make handout with list of "clues" and their implications. Distribute the handout to students and have them write a brief essay describing the foodways at the site.

6. In museums: Use specific artifacts or displays to piece together the foodways puzzle. As a class, spend some time reconstructing the foodways of the original users of a few items. Have students choose one object seen on the visit, and write an imaginative description of who used it, at what times, for what purpose, and with whom.

Activity Eleven

Making American Foodways Come Alive

OBJECTIVE: To discover and recreate foodways and favorite dishes from America's past.

BACKGROUND INFORMATION: Hays, Wilma and Vernon: Foods the Indians Gave Us; American Heritage Cookbook; Hewitt, Jean: New York Times Cookbook; Herman, Judith and Margaret S.: Cornucopia; Jones, Evan: American Food: The Gastronomic Story

RESOURCES: Local Library, Local Newspaper, State or Regional Tourist Offices, Historic Preservation Society, University History Department, Regional Branch of the National Archives (located in Boston, Seattle, New York, Philadelphia, Atlanta, Chicago, Kansas City, Fort Worth, Denver, San Francisco, and Los Angeles), Historic Museums, Historic Collections, Ethnic Societies.

PROCEDURE:

1. Have class brainstorm a list of "American Traditions" they could use as the inspiration for a Traditional Food Festival. (ENCOURAGE THEM TO INCLUDE IDEAS FROM FOODWAYS FIELD TRIPS.)

   Possibilities: Our Town 100 Years Ago (or 200 or 300), The First Europeans in This Area, Native Americans of (our region of the country), Traditional Dishes of the Southwest, Homestyle Southern Cooking, Hearty Foods of New England, Native American Foods from Throughout the Continent, The Lower East Side, New York, circa 1900, etc.

2. Have class choose a time period and a particular tradition for their festival.

3. Create committees charged with various aspects of the festival. Ask students to organize a "steering committee" which will meet regularly to coordinate and oversee plans.

4. PLANNING TASKS: Have members of the class research the foodways and traditions of the time. The information gathered may be sketchy. Encourage them to be creative! Guess and imagine, where necessary, what and how people ate. Decide on a menu. Design invitation, menu, decorations to enhance the sense of tradition.

Have a brief entertainment which evokes the period; if possible, plan games or activities probably played by the people of the time.

5. Determine the cost of preparing the meal. Invite another class, parents, or brothers and sisters, and charge them to cover costs, if the school cannot cover expenses.

6. FESTIVAL VARIATIONS:

   A. Pick a holiday and design a celebration incorporating the traditions of one particular era and culture, or of many eras and cultures.

   B. Choose one particular culture and/or time period and celebrate its holidays for a semester, creating its festivals throughout and studying its traditions.

   C. Arrange a series of festivals--perhaps one per month. Start with your area's Native Americans; next the area's European settlers; then skip fifty years (or a hundred, depending on how long your area has been settled). Try to focus on time periods when new immigrants entered the community or innovations (such as the railroad, industrialization, etc.) influenced foodways. Create a festival of the future. For a finale, prepare a festival whose courses derive from each of the time periods, and ask guests to come costumed as persons from the various eras!

   D. Plan an old-timey night. Prepare a simple dinner. Calculate a reasonable charge to defray expenses. Invite senior citizens without charge. The idea is to have a community dinner at which old folks are honored, and encouraged to talk about what is very important to them--their memories. Organize special speaking topics such as funny stories about food or agriculture, favorite meals, food customs as a child.

   E. Have a box lunch picnic. Have students prepare wholesome, simple lunches with an interesting touch. Place in a shoebox and wrap. Auction boxes at the picnic. (NO FAIR TELLING WHAT'S INSIDE!!!) Play old timey games (lawn tennis, croquet, baseball).

7. After the festival, DISCUSS: In what ways did the festival most accurately recreate the past? What things would have been different? What more would you like to know about those days? What do you like about those times? What do you think life was like?

Activity Twelve

Contemporary Food Places: The Kitchen

OBJECTIVE: To identify ways in which technological change affects foodways.

BACKGROUND INFORMATION: Earle, Alice M.: "Home Life in Colonial Days; Harrison, Molly: The Kitchen in History; Wilson, Ernest B.: Vanishing Americana.

PROCEDURE:

1. Each student should scan his/her kitchen and record "manifestations" of technology. (Alternative: Use a home economics kitchen for a group brainstorm.) Possible categories of technology include: MACHINES AND PROCESSES FROM FIELD TO TABLE (which cultivate, pick, process, pack, transport and store food--these are "manifested" through food products in the kitchen); MACHINES IN THE KITCHEN

(which prepare, store, cook foods); SOURCES OF ENERGY (mechanical, electrical, heat); MANUFACTURE OF SYNTHETIC FOOD AND ADDITIVES; MINING AND MANUFACTURE OF PACKAGING MATERIALS; THE MEDIA: TV, RADIO, PRINTING (which probably account for the presence of most of the foods in the kitchen).

2. In class: Write master list of "manifestations" on overhead projector or blackboard. Have students form small groups, and rank technical changes in the order which they have been most beneficial to people. Criteria for rating might include nutrition, time-saving, ecology, economy, sheer pleasure, wider availability of food.
3. Discuss rankings and ask students to justify the order they chose.

Activity Thirteen

Contemporary Food Places: The Fast Food Restaurant

OBJECTIVE: To explore fast food restaurants and characterize their role in contemporary American foodways.

BACKGROUND INFORMATION: Consumer Reports, May 1975 .

PROCEDURE:

1. Have students prepare a list of questions for patrons of fast food restaurants.
2. Choose sites for the survey--include several locations and various times of the day.
3. Suggested survey questions: Why did you choose this restaurant today? How often do you eat out at similar restaurants? On what occasions? With whom--family, friends? Did you eat a meal or snack here? What else have you eaten today? Will you eat? Do you prefer this food to a home-cooked meal? Do you believe it is a nutritious meal?
4. While administering the survey students should record their own observation: What ages are the patrons? Are they in family groups or peer groups? How do the patrons vary at different times of day? How long do people spend eating their meal? Where is the restaurant located? Why?
5. Have students discuss and summarize their survey results.

Activity Fourteen

What Do You Think of the American Way of Eating?

OBJECTIVE: To make a creative expression of attitudes towards American eating patterns.

PROCEDURE: Ask students to try one of the following or a creative expression of their own invention.

A. Collect a picture, cartoon or advertisement from a magazine or newspaper which reflects the contemporary American Way of Eating. Post pictures on the walls or bulletin board with sufficient space underneath for the addition of captions by other students, highlighting important facets of the food scene.

B. Make a photo essay concerning some aspect of contemporary foodways. Possible themes: "American Foodways," "Ethnic Foodways," "The Foodways of Different Age Groups," "The Foodways of the Rich--the Foodways of the Poor," "The Effect of Advertising on Foodways."

C. Pretend you are an archeologist living in the year 2500. Write a passage describing the archeological ruins of food places of the 1970s: a fast food restaurant, a supermarket, our own kitchen, a school cafeteria, etc. Predict what future beings would "discern" from the site. Describe site, what it looks like, where it is, and the exact items found there. How would future beings interpret the American Way of Eating based on their findings?

D. Using a long sheet of butcher paper, create a mural characterizing the American Way of Eating. Display mural in the school cafeteria.

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3.

NUTRITION

Part A: Foods and Essential Nutrients

All forms of life need nourishment. The quality of nourishment affects the outcome of growth, development, learning and behavior. Each person has different nutritional needs depending upon age, size, heredity, activity, state of health and climate.

Research thus far has discovered about fifty nutrients that are involved in human nutrition. Many nutritionists assume that other nutritional factors will be discovered in the future. The nutrients work together in promoting growth, providing energy, and regulating body processes.

Although poor nutrition is traditionally regarded as vitamin, mineral, calorie, and protein deficiencies, millions of Americans suffer another kind of malnutrition: that which results from eating too many highly refined, oversugared, oversalted, fat-laden foods.

From the origin of the human species until the 20th century, people ate natural foods in a relatively unprocessed form. The foods available contained naturally occurring nutrients, and people generally obtained nutrients in a proper balance if their diets were varied.

According to Jean Mayer, in 1941 about 10% of our food was highly processed; by 1972 processed foods comprised about 50% of our food supply. Processing generally removes or reduces nutrient content. In addition to processed food, numerous synthetic and formulated foods such as imitation milk and meat products are flooding the market place. Many of these factory-made foods are nutritionally worthless. To give these foods some nutrient content, vitamins or minerals are added, usually containing the "hit parade" of nutrients--such as vitamin C, riboflavin, niacin, thiamin, and iron. These nutrients are known to many people, but lesser known nutrients that are just as important are not returned to many so-called fortified foods.

Consumers who examine the labels of processed food products are often impressed with the all-star cast of nutrients. Most processed (or invented) fortified foods are nutrition losers, however, for the following reasons:

- Many of them contain excessive amounts of sugar, salt, and fat. Most processed foods lack fiber, essential to proper digestion.
- Processed foods have usually been fortified with a limited number of vitamins and minerals proudly displayed on the label. Other nutrients that are associated with these vitamins and minerals in natural foods are not added. Processing is almost a sure sign that necessary nutrients not listed on the label have been removed and not replaced.

One reason consumers remain puzzled about these important nutrition issues is that the U.S. Department of Agriculture (USDA), the government agency charged with nutrition education, has done very little, and the little that USDA has done, does not address the important nutritional problems presented by fatty, sugary, processed foods. One reason for this inaction and ineffectiveness can probably be traced to powerful pressures exerted by food industry lobbyists. Companies reaping large profits on these foods do not wish to have the harm of their products revealed. Government too often cooperates. USDA endorses all foods, regardless of health effects or nutritive value. One indication of the lack of concern in the upper echelon of USDA is that the Medical Advisor to the Secretary of Agriculture in the early 1970's subsequently joined the board of directors of Pillsbury which specializes in refined flour, cake mixes, and Funny Face beverages.

It is important to consume adequate amounts of the key nutrients--they are essential building blocks of good health. It is a mistake, though,

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Portions of this chapter were excerpted from Nutrition Scoreboard, Michael Jacobson, Avon Books (1975).

to ignore the quality of the food that contains the nutrients. For a balanced supply of all the fifty-odd nutrients necessary to health, a varied diet of natural foods is best.

Key Nutrients

What do our bodies need? The Food and Nutrition Board of the National Academy of Sciences-National Research Council has established the Recommended Dietary Allowances (RDA) to provide standards for good nutrition. The RDA are revised on a regular basis. Allowances for 18 nutrients and 17 age-weight-sex categories have been established. "To ensure that possibly unrecognized nutritional needs are met, RDA should be provided from as varied a selection of foods as is practicable . . . acceptable and palatable, " according to the National Academy of Sciences' Recommended Dietary Allowances report.

The body needs:

1. Water
2. Energy (from carbohydrate, fat, protein, or alcohol)
3. Protein
4. Essential fatty acids and fat soluble vitamins.
5. Water soluble vitamins
6. Mineral elements

Protein

Our bodies are composed of 18 - 20 percent protein, second to water as the most plentiful substance. Skin, hair, nails, eyes, muscles and enzymes are mostly protein. For growth and maintenance of the body and formation of antibodies to fight infection, protein is essential. Almost every American consumes far more than the required amount of protein. In fact, diets rich in meat may contain too much protein, putting strain on the kidneys and adding excessive quantities of saturated fat to the diet.

Proteins are made up of amino acids linked end to end in long chains. There are twenty primary amino acids, and the number of each variety and the specific order in which they are linked is a characteristic of each protein. The body can produce some but not all of these amino acids. There are eight "essential amino acids" that the body cannot produce; these must be supplied by food.

Protein foods that contain the eight essential amino acids are called complete protein. Most proteins of animal origin, such as eggs, milk, cheese, poultry, and meat and soybean protein are high quality, complete protein

FOOD AND NUTRITION BOARD, NATIONAL ACADEMY OF SCIENCES-NATIONAL RESEARCH COUNCIL RECOMMENDED DAILY DIETARY ALLOWANCES,[a] Revised 1974

Designed for the maintenance of good nutrition of practically all healthy people in the U.S.A.

								Fat-Soluble Vitamins				Water-Soluble Vitamins							Minerals					
	Age (years)	Weight (kg)	Weight (lbs)	Height (cm)	Height (in)	Energy (kcal)[b]	Protein (g)	Vitamin A Activity (RE)[c]	Vitamin A Activity (IU)	Vitamin D (IU)	Vitamin E Activity[e] (IU)	Ascorbic Acid (mg)	Folacin[f] (μg)	Niacin[g] (mg)	Riboflavin (mg)	Thiamin (mg)	Vitamin B_6 (mg)	Vitamin B_{12} (μg)	Calcium (mg)	Phosphorus (mg)	Iodine (μg)	Iron (mg)	Magnesium (mg)	Zinc (mg)
Infants	0.0–0.5	6	14	60	24	kg × 117	kg × 2.2	420[d]	1,400	400	4	35	50	5	0.4	0.3	0.3	0.3	360	240	35	10	60	3
	0.5–1.0	9	20	71	28	kg × 108	kg × 2.0	400	2,000	400	5	35	50	8	0.6	0.5	0.4	0.3	540	400	45	15	70	5
Children	1–3	13	28	86	34	1,300	23	400	2,000	400	7	40	100	9	0.8	0.7	0.6	1.0	800	800	60	15	150	10
	4–6	20	44	110	44	1,800	30	500	2,500	400	9	40	200	12	1.1	0.9	0.9	1.5	800	800	80	10	200	10
	7–10	30	66	135	54	2,400	36	700	3,300	400	10	40	300	16	1.2	1.2	1.2	2.0	800	800	110	10	250	10
Males	11–14	44	97	158	63	2,800	44	1,000	5,000	400	12	45	400	18	1.5	1.4	1.6	3.0	1,200	1,200	130	18	350	15
	15–18	61	134	172	69	3,000	54	1,000	5,000	400	15	45	400	20	1.8	1.5	2.0	3.0	1,200	1,200	150	18	400	15
	19–22	67	147	172	69	3,000	54	1,000	5,000	400	15	45	400	20	1.8	1.5	2.0	3.0	800	800	140	10	350	15
	23–50	70	154	172	69	2,700	56	1,000	5,000		15	45	400	18	1.6	1.4	2.0	3.0	800	800	130	10	350	15
	51+	70	154	172	69	2,400	56	1,000	5,000		15	45	400	16	1.5	1.2	2.0	3.0	800	800	110	10	350	15
Females	11–14	44	97	155	62	2,400	44	800	4,000	400	12	45	400	16	1.3	1.2	1.6	3.0	1,200	1,200	115	18	300	15
	15–18	54	119	162	65	2,100	48	800	4,000	400	12	45	400	14	1.4	1.1	2.0	3.0	1,200	1,200	115	18	300	15
	19–22	58	128	162	65	2,100	46	800	4,000	400	12	45	400	14	1.4	1.1	2.0	3.0	800	800	100	18	300	15
	23–50	58	128	162	65	2,000	46	800	4,000		12	45	400	13	1.2	1.0	2.0	3.0	800	800	100	18	300	15
	51+	58	128	162	65	1,800	46	800	4,000		12	45	400	12	1.1	1.0	2.0	3.0	800	800	80	10	300	15
Pregnant						+300	+30	1,000	5,000	400	15	60	800	+2	+0.3	+0.3	2.5	4.0	1,200	1,200	125	18+[h]	450	20
Lactating						+500	+20	1,200	6,000	400	15	80	600	+4	+0.5	+0.3	2.5	4.0	1,200	1,200	150	18	450	25

[a] The allowances are intended to provide for individual variations among most normal persons as they live in the United States under usual environmental stresses. Diets should be based on a variety of common foods in order to provide other nutrients for which human requirements have been less well defined. See text for more detailed discussion of allowances and of nutrients not tabulated. See Table I (p. 6) for weights and heights by individual year of age.

[b] Kilojoules (kJ) = 4.2 × kcal.

[c] Retinol equivalents.

[d] Assumed to be all as retinol in milk during the first six months of life. All subsequent intakes are assumed to be half as retinol and half as β-carotene when calculated from international units. As retinol equivalents, three fourths are as retinol and one fourth as β-carotene.

[e] Total vitamin E activity, estimated to be 80 percent as α-tocopherol and 20 percent other tocopherols. See text for variation in allowances.

[f] The folacin allowances refer to dietary sources as determined by *Lactobacillus casei* assay. Pure forms of folacin may be effective in doses less than one fourth of the recommended dietary allowance.

[g] Although allowances are expressed as niacin, it is recognized that on the average 1 mg of niacin is derived from each 60 mg of dietary tryptophan.

[h] This increased requirement cannot be met by ordinary diets; therefore, the use of supplemental iron is recommended.

foods. Protein foods deficient in substantial amounts of one or more of essential amino acids are called incomplete protein and are usually from plant sources. However, when certain incomplete protein foods are eaten together, they supply complete protein. Incomplete protein foods that supply all essential amino acids when eaten together are called complementary proteins. Examples of complementary "pairs" are grains and legumes, legumes and milk, rice and sesame/sunflower seeds.

Complementary proteins must be eaten together for maximum efficiency. Here are some examples:

		Usable protein is equivalent to:
If eaten separately:	Milk + Peanuts	
5 tbsp. non-fat dry milk		2-1/3 oz. steak
1 cup peanut butter		7 oz. steak
		9-1/3 oz. steak
If eaten together:		
5 tbsp. non-fat dry milk + 1 cup peanut butter	25% increase	11-2/3 oz. steak
	Wheat + Milk	
If eaten separately:		
4 slices whole wheat bread (or 3/4 cup dry macaroni)		1 oz. steak
1 oz. cheese		1 oz. steak
		2 oz. steak
If eaten together:		
4 slices whole wheat bread + 1 oz. cheese	25% increase	2-1/2 oz. steak
	Beans/Peas + Wheat	
If eaten separately:		
1/2 cup beans		2 oz. steak
3 cups whole wheat flour		5 oz. steak
		7 oz. steak
If eaten together:		
1/2 cup beans + 3 cups whole wheat flour	33% increase	9-1/3 oz. steak

Source: Frances Moore Lappé, Diet for a Small Planet, pp. 363, 371-372.

As we learn about the health, ecological and ethical consequences of excessive meat consumption, more and more Americans are moving towards a vegetable-based diet. A thorough understanding of complementary protein can provide a delicious, nutritious, low-cost diet.

Carbohydrates

Our instinct and desire to eat probably comes from our need for energy. Body energy is expressed in calories. Carbohydrates and fats are our primary source of energy. If our food lacks sufficient calories from carbohydrate and fat or contains more protein than we need, we metabolize protein for calories. Protein is more expensive and needed for body building and maintenance, thus, it is best to rely on carbohydrates and fats to supply energy needs. About 50-60 percent of our total calories should come from carbohydrates.

The principal carbohydrates in foods are sugars (simple carbohydrates) and starches and fiber (complex carbohydrates). Sugars occur naturally in honey, fruits, and dairy products. Other nutrients--vitamins, minerals, protein and fiber, are found along with these naturally occurring sugars. Sucrose--table sugar and the sugar found in candy, jams, jellies, cakes, pastries, soft drinks--is highly refined. Since the vitamins and trace minerals in the sugar cane or sugar beet are removed, table sugar contains only "empty" calories. To satisfy one's sweet tooth, it is best to consume foods containing natural sugars, because vitamins, minerals and fiber are present to give important nourishment and a feeling of satiety.

Starch is present in grains made into cereal and flour, seeds, and vegetables such as corn and potatoes. Starch is composed of glucose (a simple sugar) molecules linked end to end in long, often complexly branched chains. Starchy foods have an ill-deserved reputation as being fattening, and dieters avoid them. Yet starches provide no more calories per gram than protein, and starchy foods--such as bread or potatoes--supply key nutrients. They are a valuable part of a healthful diet.

However, starchy foods can also be highly refined, such as white flour, white rice, cornstarch, and many breakfast cereals. The refining process removes much or all of many essential nutrients and fiber. Highly refined food has reduced nutritional value, is ecologically wasteful and energy intensive. Some highly refined foods are then unfairly labeled "enriched"--such as white flour which after losing nutrients is partially restored by added thiamin, riboflavin, niacin, and iron. But other important B vitamins (B-6, pantothenic acid), vitamin E, trace minerals and fiber are greatly reduced or removed and not returned.

Highly refined sugars and starches are not only nutritionally inferior, but if eaten frequently, may contribute to tooth decay and other diet-related illnesses. Highly refined sugars and starches tend to collect around the teeth and provide food for the bacteria that cause tooth decay. The sugar in milk products--lactose--is not as decay-producing as refined sugar.

Concentrated sugars like table sugar, honey, jams, jellies, and candy are readily absorbed into the blood. They provide quick energy, but are used very rapidly, making us feel we need more very soon. With table sugar, blood sugar levels go high and then drop. The body needs an ongoing gradual supply of energy. The more complex carbohydrates, like whole grains and seeds, take longer to break down. Fat and protein break down slowly also, providing a more constant level of energy.

Recommended Dietary Allowances (National Academy of Sciences, 8th Edition) estimates that "many Americans derive about 30 percent or more of their energy from relatively pure sugars, fats, and alcohol, which provide almost no vitamins and minerals or, at best, only a very narrow spectrum of nutrients. These food consumption trends can have important adverse consequences on the overall quality of the diet."

Dietary fiber (also called "roughage" or "bulk") includes cellulose, pectin, and other complex carbohydrates that the human body digests poorly or not at all. (Ruminant animals such as cows can digest these carbohydrates.) Fiber is present in brown rice and whole wheat bread, but is largely removed from white rice and white bread. All fruits and vegetables contain varying amounts of fiber.

The fiber content of the average American diet may be dangerously low. There is good evidence that this deficiency may be the chief cause of several illnesses of the digestive system, such as diverticulosis and constipation, and a contributing factor in bowel cancer. Fiber intake can be increased simply by eating more whole grain products, wheat bran, legumes, vegetables, and fruits.

Fat

Body fat plays an important role in our bodies as an insulator from heat and cold, a storage form of energy, and a cushion for the internal organs. Dietary fat is necessary as a source of the fat-soluble vitamins A, D, E and K and essential fatty acids such as linoleic acid. Fat adds flavor to the diet, and provides a concentrated source of energy. Each gram of fat has nine calories, compared to four calories for each gram of carbohydrates or proteins. Inadequate amounts of essential fatty acids may result in rough, scaly skin, dermatitis, dry hair and poor growth.

While some fat in the diet is necessary, excess fat contributes to obesity, heart disease, and possibly certain forms of cancer. Nutritionists generally recommend that dietary fat supply no more than one-third of calories. Currently most Americans obtain 40-45 percent of their calories from fat, with many people obtaining 50 percent of their calories from fat.

Much of the fat in our foods is hidden. Processed meat, beef and pork, baked goods, pastries and cakes, donuts, fried foods, snack foods, whips and toppings all may contain a considerable amount of fat without our realizing it.

The type of fat as well as the quantity of fat is important. There are three major types, distinguished by their chemical structure. Saturated fats have no double bonds; monosaturated fats have one double bond; polyunsaturated fats have two or more double bonds. Excessive intake of saturated fat is considered a risk factor in heart disease. Saturated fat comes primarily from animal sources--meats and dairy products--although coconut and palm oils are also high in saturated fat.

Vegetable oils which are unsaturated in their natural state may be saturated through a process called hydrogenation. Normally vegetable oils are liquid at room temperature; the hydrogenated oils are hardened so they are solid at room temperatures. Hydrogenated oils do not become rancid and therefore have a long shelf life. Many brands of margarine, peanut butter and shortenings contain hydrogenated oil. When vegetable oils are hydrogenated the essential fatty acids are destroyed.

Many authorities believe that polyunsaturated fat reduces the level of blood cholesterol, a factor in coronary heart disease (disease of the arteries that supply the heart muscle with blood). The American Heart Association recommends that less than 10 percent of total calories come from saturated fat, and up to 10 percent should be supplied by polyunsaturated fat. The remainder of the calories from fat should consist of mono-unsaturated fat.

Water

Water is the most abundant constituent of the body, amounting to one-half to three-fourths of the body's weight. All chemical processes in the body take place in water. Too much or too little water is incompatible with good health. Large deficits may lead to death. The body is equipped with a number of mechanisms, including the sensation of thirst, that help to maintain body water content within narrow limits. Normal losses of water occur in perspiration and excretion.

Athletes sometimes suffer ill effects from water loss in training, often from sweating and using diuretics to reduce weight prior to weighing in for some sports. This is potentially dangerous and could cause fatigue, vomiting, nausea, exhaustion and fainting.

Vitamins and Minerals

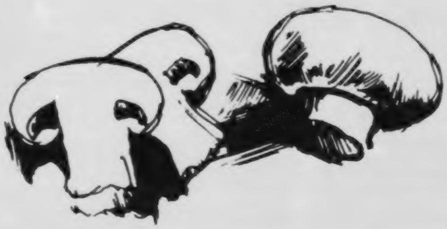
Vitamins are relatively new in the science of nutrition. The first vitamin was discovered in 1913.

Recommended Dietary Allowances (RDA) have been established for ten vitamins. These ten were selected because foods which contain them traditionally contained the other vitamins essential for human nutrition. The assumption of "leader" nutrients still holds true for natural foods, in general, but not for manufactured foods which have only a selected few nutrients added. Other important vitamins and minerals are almost never present. A balanced diet of natural foods offers the best opportunity for adequate vitamins and minerals.

A person's need for vitamins and minerals depends to some extent on the composition of his or her diet. For instance, a diet high in sugar and starch leads to an increased demand for thiamin (vitamin B-1). A diet that is excessively high in protein can lead to a pyridoxine (vitamin B-6) deficiency, and this deficiency can in turn reduce the absorption of vitamin B-12 from food. The interrelationships between vitamins, minerals, and the rest of the diet are many, complex, and still not entirely understood by nutrition researchers.

Drugs, too, can influence the body's nutritional needs. The birth control pill increases a woman's requirement for vitamin B-6, and is now (belatedly) being studied for other subtle effects. To be on the safe side, women on the pill, and people taking other drugs, should ask their doctor about taking a vitamin-mineral supplement. Of course, the safest course of action is to use safer methods of birth control and avoid the use of drugs whenever possible.

A person's nutrient requirements are relatively independent of one's caloric needs. In other words, a person would need approximately the same amounts of the various nutrients whether one led a rather sedentary life as an artist or a more active daily routine as, say, a hiking guide. Calorie needs would differ greatly, but not nutrient needs. Thus, active people who eat a varied diet containing 3,000 calories might easily consume enough of each nutrient, but if they changed their life style so as to need only 1,500 calories a day, they might simply not eat enough food to obtain adequate amounts of all the necessary nutrients. Many people not only consume low-calorie diets, but many of those calories are pure sugar and fat and are not associated with any significant amounts of vitamins, minerals, protein, or fiber. Persons whose diet is one-fifth soda pop, chewing gum, and candy must obtain 100 percent of their nutrients from only 80 percent of their food.



KEY NUTRIENT	FUNCTION	DEFICIENCY	SOURCES	COMMENT
VITAMIN A	* Helps keep skin smooth * Helps keep mucous membranes firm and resistant to infection	* Night blindness * Lowered resistance to infection * Dry, rough, itching skin	* Liver, egg yolk, deep yellow fruits, dark fruits, dark green vegetables, whole milk, vitamin A fortified skim milk, margarine, butter	* Excessive amounts can be toxic * Laxatives decrease absorption
VITAMIN D	* Helps the body absorb calcium and phosphorus * Helps incorporate calcium and phosphorus into bones	* Rickets, Osteomalacia * Faulty bone growth	* Fish liver oil, fortified milk, sunshine converts substances in the body to vitamin D	* Excessive amounts may be toxic, possibly causing kidney damage
VITAMIN E	* Acts as an antioxidant, protecting fats and vitamin A & D from rapid destruction	* Drastic deficiency not apt to occur, except in severe illnesses (malabsorption)	* Green, leafy vegetables, wheat germ, oils (except coconut oil), nuts, seeds, whole grains, liver	* Freezer storage lowers vitamin E content of fried food
VITAMIN K	* Maintains blood-clotting factors	* Tendency to bleed excessively	* Dark, leafy vegetables, soybean oil, egg yolk, liver	* Prolonged antibiotic and anticoagulant therapy can cause deficiencies * Can be synthesized in the intestine so body not dependent on a dietary source

KEY NUTRIENT	FUNCTION	DEFICIENCY	SOURCES	COMMENT
VITAMIN B-1 THIAMIN	* Helps release energy from food * Helps promote normal appetite and digestion * Helps keep the central nervous system healthy * Helps prevent irritability	* Beri-beri (characterized by numbness or tingling of toes and feet, paralysis of legs, atrophy of leg muscles) * Sensitivity to noise and pain * Fatigue and poor appetite	* Wheat germ, nuts, pork, peas, whole grain and enriched bread and cereal, dried beans, meat, fish	
RIBOFLAVIN VITAMIN B-2	* Helps the cells use oxygen * Helps keep eyes, skin, hair healthy * Helps prevent scaly, greasy skin around the mouth and nose	* Cracks at corners of mouth (cheilosis) * Eye irritation * Dermatitis	* Milk, cheese, liver, chicken, legumes, whole wheat and enriched bread and cereals, dark green leafy vegetables	* Easily destroyed by light if in solution (as in milk)
NIACIN VITAMIN B-3	* Helps keep the nervous system healthy * Helps keep skin, mouth, tongue, digestive tract healthy * Enables the cells to use other nutrients	* Pellagra * Weakness, poor appetite, scaly dermatitis, mental confusion	* Peanut butter, fish, meat, poultry, greens, whole grain and enriched breads and cereals, sesame seeds, soybeans	
VITAMIN B-6 PYRIDOXINE	* Helps the body use and make protein	* Anemia * Hyperirritability * Dermatitis	* Wheat germ, whole wheat breads and cereals, egg, banana, legumes, fish, meat, greens	* Pregnancy, oral contraceptives, and excessive use of alcohol substantially increase need

KEY NUTRIENT	FUNCTION	DEFICIENCY	SOURCES	COMMENT
PANTOTHENIC ACID	* Helps release energy from food * Helps detoxify certain drugs	* Irritability, restlessness, mental depression, impaired muscle coordination, decreased antibody formation	* Eggs, milk, legumes, liver, wheat bran, wheat germ, peanuts, peas, poultry, corn, asparagus, broccoli, sweet potato, kale, fish	
COBALAMIN VITAMIN B-12	* Assists in manufacturing blood * Maintains healthy nervous system	* Pernicious anemia	* Liver, kidney, meat, milk, cheese, oysters, fish, yogurt (not in plant foods)	
FOLACIN FOLIC ACID	* Involved in many biological functions including blood formation	* Macrocytic anemia * Decreased ability to produce white blood cells	* Yeast, whole grains, legumes, cowpeas, lentils, navy and kidney beans, liver, asparagus, corn, broccoli, greens	* Pregnancy, oral contraceptives and excessive use of alcohol increase need
BIOTIN	* Synthesis of fatty acids * Produces energy from glucose	* Deficiency unlikely	* Egg, liver, pork, chicken, salmon, sardines, cauliflower, cowpeas, green peas	* Deficiencies produced by eating large amounts of raw egg whites (cooking destroys the anti-biotin factor)
CALCIUM	* Bone and tooth formation * Blood clotting * Muscle contraction and relaxation	* Rickets * Poor growth	* Milk, cheese, sesame seeds, egg yolk, meat, legumes, whole grains, nuts, green leafy vegetables, mustard greens and collards	

KEY NUTRIENT	FUNCTION	DEFICIENCY	SOURCES	COMMENT
VITAMIN C	* Needed for synthesis of collagen, the cementing material that holds body cells together * Helps body resist infection * Strengthens blood vessels * Helps prevent fatigue * Helps heal wounds and broken bones * Keeps gums healthy	* Scurvy characterized by listlessness, lack of endurance, fleeting pain in legs and joints, small hemorrhages under the skin, bleeding gums * Lowered resistance to disease	* Kale, brussel sprouts, strawberries, broccoli, collards, mustard greens, green pepper, canteloupe, citrus fruit	* Easily destroyed by heat, exposure to air and by addition of baking soda when cooking vegetables
PHOSPHORUS	* Bone formation * Helps body use energy	* Poor growth (dietary deficiency not apt to exist)	* Milk, cheese, meat, egg yolk, whole grains, legumes, nuts	* May be excessive in U.S. diet * Best absorption thought to be in 1:1 ratio with calcium--current ratio is 2-3 (P): 1 (C)
IRON	* Serves as a constituent of heme, a part of the hemoglobin molecule	* Anemia, fatigue, listlessness	* Liver, meat, eggs, soybeans, molasses, green leafy vegetables, dried fruits	*Anemia is the most common deficiency disease
IODINE	* Component of thyroxin, a hormone which regulates the rate that the body uses energy	* Simple goiter	* Sea food, iodized salt	

KEY NUTRIENT	FUNCTION	DEFICIENCY	SOURCES	COMMENT
MAGNESIUM	* Regulates cardiac, skeletal muscle, and nervous tissue function * Plays an intricate role in most cell functions	* Tetany * Convulsions * Muscle dysfunction	* Whole grains, pumpkin seeds, nuts, eggs, fish, green vegetables	* Alcoholics have increased need * Deficiency symptoms rarely occur--only in malabsorption, or alcoholism
SODIUM	* Maintains fluid balance in body (osmotic pressure)	* Weakness, fainting	* Table salt, processed food, monosodium glutamate	* U. S. diet may be too high in sodium * May contribute to the development of hypertension
POTASSIUM	* Necessary for muscle contraction and regular heart rhythm * Maintains fluid balance in body (osmotic pressure)	* Muscular weakness and paralysis	* Fresh fish, green beans, red beans, milk, grapefruit, oranges, bananas, tomatoes, spinach	* Widely available in adequate amounts in most diets
CHROMIUM	* Helps in metabolism of glucose * Protects against toxic effects of lead		* Meats, whole grain bread and cereal	* Growing concern that U. S. diet may be deficient in chromium
ZINC	* Promotes growth and wound healing	* Abnormal hair and nail formation * Deformed bone formation * Defective healing * Impaired sense of taste	* Oysters, peas, whole grain cereals, liver, oatmeal, beef, clams, corn, peanut butter, milk	* Growing concern that U. S. diet may be deficient in zinc

Activity One

My Diet and Health

OBJECTIVE: To clarify personal values related to diet and health.

MATERIALS: Diet and Health Worksheet

PROCEDURE:

1. Distribute a worksheet to each student. Have them circle the response which most closely indicates the way they feel about each statement.
2. After students have completed worksheet, have them form groups of three to share and discuss their responses. There are no right or wrong responses; statements are to be used as thought and discussion starters.
3. DIET AND HEALTH WORKSHEET:

Responses: SA = Strongly Agree
AS = Agree Somewhat
DS = Disagree Somewhat
SD = Strongly Disagree

Statement:	Responses:			
1. I am concerned about the quality of the food I eat.	SA	AS	DS	SD
2. I usually consider nutrition when I choose a food.	SA	AS	DS	SD
3. The food I eat affects my health.	SA	AS	DS	SD
4. The food I eat affects my appearance.	SA	AS	DS	SD
5. The food I eat will affect my future health.	SA	AS	DS	SD
6. I eat too much of certain foods.	SA	AS	DS	SD
7. I eat too little of certain foods.	SA	AS	DS	SD
8. I should improve my diet.	SA	AS	DS	SD
9. I am willing to try new foods.	SA	AS	DS	SD
10. I am willing to cut out foods that are not good for me.	SA	AS	DS	SD
11. I try to learn to like healthful foods.	SA	AS	DS	SD
12. I take good care of my body.	SA	AS	DS	SD

Activity Two

Body Awareness and Personal Nutrition

OBJECTIVE: To assess personal nutrition and health status.

BACKGROUND INFORMATION: Jacobson, Michael: Nutrition Scoreboard, Mayer, Jean: A Diet for Living (1975) (available from Consumer Union, 256 Washington Street, Mt. Vernon, N.Y. 10550, $4 + .50 postage.)

MATERIALS: Scale, Mirror(s), Tape Measure, Current Photograph.

RESOURCES: School or community physician, nurse, nutritionist.

PROCEDURE:

1. INTRODUCTORY COMMENTS: The nutrition profile is a tool to heighten awareness of the relationship between good nutrition, growth, development, appearance and performance. In introducing the activity, emphasize that the results of a poor diet are not always physically evident. Many dietary deficiencies and abuses have long-range effects which may show up later in life.
2. Pair the students for weighing and measuring each other.
3. Have students fill out "My Body Profile." Emphasize that answers will indicate how students feel about their body and health, since it is often difficult to be objective about ourselves.
4. Have students assess the areas in which they need to improve their health by changing their diets. Circle with a red pencil and list. Have students fill in the possible nutrients involved and food sources on their body profiles as they study them.
5. DISCUSS: Do you think poor diet is always reflected in appearance, energy levels or present health? Why or why not? How could poor diet have short and long range effects? List possible long-range effects. Judging from the nutrition profile, what changes do you need to make in your diet? How will you make these changes? What foods will you add or delete? What eating habits will you change?

MY BODY PROFILE

NAME: WEIGHT:

AGE: HEIGHT:

DATE:

BODY BUILD:

_______ Endomorph (Inclined to be round, soft)

_______ Ectomorph (Inclined to be slender)

_______ Mesomorph (Inclined to be muscular)

_______ Combination of _________________ and _________________.

CURRENT PHOTOGRAPH

Write a description of your body and how you feel about it, and how well you take care of it.

	Possible Nutrients Involved	Food Sources
_____ Alert, Attentive, Energetic		
_____ Apathetic; Listless		
_____ Emotionally Stable		
_____ Irritable; Jumpy		
_____ Shiny Hair		
_____ Dull, Brittle Hair		
_____ Good Color; Clear, Firm Skin		
_____ Pallor; Puffy, Cracked Skin		
_____ Clear, Bright, Shiny Eyes		
_____ Inflamed, Dull, Grayish Eyes		
_____ Sensitive to Noise and Pain		
_____ Well-formed, Orderly Teeth; Free of Decay		
_____ Poorly-formed, Decayed or Filled Teeth		
_____ Healthy Red Gums		
_____ Spongy Gums that Bleed Easily		
_____ Deep Red Tongue		
_____ Swollen, Raw Sores on Tongue		
_____ Firm, Well-formed Finger Nails		

Height: _____Short _____Medium _____Tall

Weight: _____Normal _____Overweight _____Underweight

How do I feel about my general appearance?

Do I have enough energy to enjoy the things I do and do the things I enjoy?

Am I sick much of the time?

Do I have poor resistance to infection?

My body condition is: _____excellent _____good _____poor

I would like to take better care of my body by:

Activity Three

A Four-Day Food Diary

OBJECTIVE: To identify the nature, quantity and sources of food eaten; to determine whether the food consumed meets nutritional needs.

MATERIALS: FOOD CONSUMPTION TABULATION SHEET

PROCEDURE:

1. Encourage the students to keep a careful, accurate diary which will be used for many subsequent activities. The student may wish to compile the results for a class survey. Another four-day food diary at the end of the course would help determine the course's effect on eating behavior. Have the students outline pages as follows, leaving adequate space for all foods consumed.

	Time	Food and Amount	Source	Place Consumed
Breakfast				
Midmorning				
Lunch				
Afternoon				
Dinner				
Afterdinner				

2. Have the students record in a four-day diary:
   - * types of foods
   - * amounts in home measures (1 cup, 1 slice, etc.)
   - * source of food (home, vending machines, etc.)
   - * where food was consumed (car, park, dinner table)

3. Have the students determine how well they are feeding their bodies by organizing foods and amounts consumed into categories:
   - * vegetables
   - * fruits
   - * protein foods
   - * bread and cereal
   - * sweets
   - * crisp fried foods
   - * miscellaneous

4. Mixed foods such as cheese pizza may be counted as 1/2 serving protein food, 1/2 serving vegetable, 1 serving bread; stew (1 cup) may be considered as 1/2 - 1 serving protein, 1-2 servings vegetables, depending on the composition; presweetened cereal may be counted as 1/2 serving cereal, 1/2 serving sweet; a milkshake may be 1/2 serving milk, 1/2 serving sweet, etc.

FOOD CONSUMPTION TABULATION SHEET

FOOD	Day 1	Day 2	Day 3	Day 4	Total	Total/4 = Average Per Day
Vegetables						
Fruit						
Milk						
Protein Foods						
Cereals & Bread						
Sweets						
Crisp Fried Foods						
Miscellaneous						

Recommended Foods and Servings Per Day:
- Vegetables-Fruits: 4 Servings (citrus, deep, leafy or green, deep yellow, others)
- Cereals & Breads: 4 Servings (preferably whole grain)
- Protein Foods: 2 or more Servings
- Milk: 3 or 4 Servings

More than 2 sweets or empty calorie snacks per day is unsatisfactory.

5. Using Food Consumption Tabulation Sheet, have students record number of servings in each category daily. Total the four days and divide by four to find the average daily consumption for each category.

   The following is a list of average servings:

Vegetables-Fruit	1/2 cup or one unit (1 orange)
1 cup Milk, Yogurt	8 oz.

Protein Foods

1 cup Beans, cooked	8 oz.
Eggs	2
4 tbsp. Peanut Butter	4 oz.
Chicken, Lean Meat, Cooked Fish	2 to 3 oz.
Cheese	2 oz.

Cereal and Bread

Bread	1 slice
Cereal, Cooked	1/2 to 3/4 cup
Cereal, Dry	1 oz.
Cornmeal, Grits, Rice	1/2 to 3/4 cup

Crisp Fried Foods: 1 oz.

Sweets

2 small cookies
1 cup sweetened drink
1 slice cake
1 doughnut
2 small candies
1/2 cup ice cream

6. Have each student make a personal bar chart of average daily intake for food categories. Have students calculate total milk consumption, soft drink consumption, vegetables and fruit consumption, etc., for the class. Have them prepare a bulletin board using the information.

7. Have the students examine their average food intake to determine:
   * Is the diet well-balanced?
   * How many unwholesome foods are included?
   * Do those with a well-balanced diet also eat an unsatisfactory number of unwholesome foods?

8. Have students grade their average daily record:
   * Allow 25 points for 100% of each of the basic four food groups.
   * Allow 5 points for each vegetable. Add 2 points if fresh, unprocessed variety.
   * Allow 5 points for each fruit; add 2 points if fresh, unprocessed variety.
   * Allow 5 points for each protein food. Add 2 points for non-meat protein foods.
   * Allow 5 points for each grain or bread. Add 2 points for each whole grain product.
   * Subtract 5 points for each food with added sugar.
   * Subtract 5 points for each food high in fat (processed meats, baked goods, fried foods and snacks).
   * Subtract 5 points for each food containing sodium nitrite (processed or smoked meats).

9. Collect totals for class and have students graph results. Have students determine a good, fair and poor diet in terms of class scores.
   DISCUSS: Does the class eat well? Is it a well-nourished group? How could that be determined?

10. Divide the class into groups of 6-8. DISCUSS: How do you feel about the way you eat? Are there certain groups of food you don't eat enough of? How could you increase these foods in your diet? Are you willing to give up empty calorie foods, or substitute foods that will benefit your health? What do you think would be a good way of reducing your intake of empty calorie foods?

Activity Four

How Much Do We Pay for Empty Calories?

OBJECTIVE: To calculate the portions of the personal and family budget spent on foods with nutritive value, and on empty calorie foods.

BACKGROUND INFORMATION: Burros, Marian: "The Real Cost of Convenience Cooking," FFPNFP.

PROCEDURE:

1. Have students determine whether the family makes a sound investment in food. (Food is one of the major investments a family or an individual makes.) The student could volunteer to purchase the food for the family or check off the food and prices when the groceries are brought home. (Be sure to add extra items purchased during the week.)

COST OR ESTIMATED VALUE OF GROCERIES FOR MY FAMILY FOR ONE WEEK

Vegetables and Juices	$ ________	
Fruit and Juices	________	
Milk, Cheese, Yogurt	________	
Protein Foods	________	
Bread and Cereal	________	
Other Staple Items	________	
TOTAL		$ ________
Sweets, Cookies, Candy	$ ________	
Cake, Pastries	________	
Presweetened Cereal	________	
Soft Drinks	________	
Other Empty Calorie Foods	________	
		$ ________

2. Processed foods are an expensive addition to the family's food bill. Calculate the portion of your family's food budget spent on relatively unprocessed basics, and the portion on highly processed items. (TV dinners, fancy frozen vegetables, casserole kits--such as Tuna Helper)
3. DISCUSS: What major factors influenced the purchase of good food? What major factors influenced the purchase of poor food? How much money is spent on nutritious foods? How much on empty calorie foods?
4. Have students keep track of their own food purchases for a week. Calculate the portion spent on nutritious, wholesome foods and the portion spent on empty calories. Add up class totals.
5. Have students prepare bar graphs of above information.

Activity Five

School Lunch: Model or Menace?

OBJECTIVE: To investigate the quality and purpose of the food service program. To determine student, parent and school personnel satisfaction with it.

BACKGROUND INFORMATION: FRAC and Children's Foundation Information, Goodwin, Mary: "Improving Your School Lunch," FFPNFP; House and Garden Bulletin #72: "Nutritive Value of Foods," USDA.

PROCEDURE:

1. Introductory Comments: The legislative intent of the school food service program is to safeguard the health and well being of the nation's children and to encourage the domestic consumption of nutritious agricultural commodities and other foods: "Participating schools shall serve lunches that are nutritionally adequate, and shall also coordinate the school's health-education activities with the formation of good eating habits in the lunch room to the end that participating children will gain a full understanding of the relationship between proper eating and good health."

   The school food service program serves students from kindergarten to 12th grade. The program's lunches may be the only planned meal many students eat. It can be a powerful learning tool providing a living laboratory for classroom instruction or a disaster area with terrible food served in a tense, noisy atmosphere with a negative nutrition message.

2. Divide the class into the following committees:
   * Interview Committee
   * Survey Committee
   * Quality Control Committee

3. INTERVIEW Committee: Have students interview elected school board members, administrators, parents, teachers, and school food service director concerning the school lunch program. In a brainstorming session students should identify general concerns and information they would like about the school lunch program. Focus interview questions on these areas:

   Possible Questions:
   * What is the purpose of the program?
   * What is the value of the School Food Service (SFS) program?
   * Is the SFS program a model for good nutrition?
   * Is the quality of food satisfactory?
   * Is the atmosphere in the cafeteria conducive to good eating habits?
   * Is the cost of lunch reasonable?
   * Do you feel the SFS program is important to students' growth, development and performance? What are students learning from it? What more could students learn from it?
   * What would be the single most important change in the program?
   * How could this change come about?
   * What are other important changes?
   * Are you willing to commit funds, time or energy to improve the program?
   * What can students do to make the program more successful?

Committee should prepare brief report on interview findings.

4. SURVEY Committee: The survey committee should focus on how students feel about the school lunch program, why or why not they participate, and what changes they desire. Based on their own feelings and concerns and perceptions of classmates' attitudes, the Committee should brainstorm a survey questionnaire.

   Some Possible Survey Statements: Yes/No

   - I eat the school lunch because I feel it is good for me.
   - I skip lunch when I'm dieting.
   - The school lunch has introduced me to new foods which I now eat and enjoy.
   - The school lunch is nutritious
   - The menu items are selected to go well together.
   - The meals are too starchy.
   - The meals are too greasy.
   - The main dishes are soupy.
   - The portions served are too large.
   - The portions served are too small.
   - Too much meat is served.
   - Too many vegetables are served.
   - The main purpose of school lunch is:
   - The one thing I'd like to change is:
   - I think school lunches are nutritious because:
   - School lunches could be made more nutritious by:
   - My favorite vegetable is:
   - My favorite main dish is:

5. QUALITY CONTROL Committee: Have students keep a record of foods served for a few days. Assess the quality of lunches offered by gathering the following information:

   - Are menus balanced and nutritious? Are a variety of wholesome foods served? Is any type of food missing?
   - Is food selected and prepared providing a variety of nutrients, color textures, flavors and forms? Are hot foods served hot, and cold foods cold? How far in advance of lunch is the food prepared? (Overcooked foods lose taste, texture, color, flavor and nutrients.)
   - What kinds of "nutritional minuses" are served--foods high in salt, sugar, fat, refined rather than whole grains?
   - Check the sales of food in your school cafeteria. Compare quantities of wholesome food and empty calorie food purchased. Prepare a list of items and amounts sold.
   - Is there a choice in Type "A" lunch? A soup/sandwich/salad bar? Low calorie lunch? Vegetarian lunch?
   - What kinds of fabricated foods are served? What is in them?
   - The new trend is pre-plated lunches. Are your lunches prepackaged? Are they well-balanced? Are the amounts served adequate? How much do students throw away?
   - Do students participate in planning, preparing and serving the school lunch?
   - What would students learn about nutrition and foods if they depended upon the school food service program as a model?

   Have students report information collected and make recommendations based on findings.

6. ACTION Committee: Form an action committee of interested students. Have the action committee:

- Set up a panel to present the findings of the various committees.
- Discuss results of three committees and form recommendations. List them in order of priority beginning with the most important or the one that has the best chance for success.
- Get on the agenda of the PTA and invite administrators, teachers, school lunch director, cafeteria manager, to present their views if they differ from the class conclusions.
- Invite to the PTA supportive students, health professionals, such as dentists, nutritionists, dietitians, physicians. Ask the health professionals to issue a statement on school feeding. Publicize the statement in local newspapers.
- Create an interest in the community through newspaper articles, editorials, or letters to the editor, on the findings of the committees, and recommendations for action. Request public service time on TV and radio for guest editorial. Food editors and consumer reporters may be helpful.
- Encourage community input and assistance in drawing up final recommendations.
- Present recommendations to school food service administration. Ask for a response within a specified time.
- If necessary, go to the school board to get support. Find out when they meet and ask to be on the agenda. Bring parents and community leaders, especially those in health and education.

Activity Six

School Lunch: Nutrition Information and Inspiration

OBJECTIVE: To use the school lunch program to teach nutrition.

PROCEDURE:

1. INTRODUCTORY COMMENTS: All lunches served in the school should be models of good nutrition. Students and staff can plan monthly nutrition campaigns using school lunch to provide information and inspiration for good nutrition. Try one of the following:

   A. Arrange with cafeteria staff to have a once-a-month "Nutrition Meal." (Examples: Use Complementary Protein, Cut Down on Sugar, Meals Less Fat, Emphasize Iron, Remember your Vitamin ___, Fiber for Health, Lower Cholesterol, Why Add Salt? etc.) Divide class into groups of four to six. Each month one group should help plan a meal with the lunch staff, and prepare a brief one-page flyer defining the meal's nutrition theme, and explaining the benefits of each food available. In the week prior to the meal, the groups should build up school-wide interest through PA announcements, posters, etc. Excite classmates' curiosity through clues and hints about the meal, interesting facts, etc. Inform teachers in advance about the Nutrition Meal and encourage them to help build interest and excitement. The more fun and interesting the Nutrition Meal is, the better the chances that students will remember its message.

   B. If staff is unable to prepare special meals, have each group acquire a month's menus well in advance. Have them plan a nutrition theme around a particularly good meal, or choose a "terrific" food to highlight each week. Publicize and inform the school through PA announcements, posters, informative signs in the cafeteria, etc.

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C. Each month have one group focus on a certain category of foods: fruits, vegetables, protein foods, grains, dairy, etc. PA announcements, posters, flyers, etc. should explain the nutritive value of these foods, and identify good and poor choices. (For example, flyers should explain why hot dogs or luncheon meat are poor protein sources or white enriched grains inferior to whole grains.)

D. Nutrition Meals and monthly themes can provide an opportunity to focus on seasonal and regional foods. Students should publicize history, agricultural methods, preparation and cooking tips, and other interesting facts as well as nutritive information.

Activity Seven

In Search of Solutions for Better Eating

OBJECTIVE: To find solutions to obstacles that impede good nutrition.

BACKGROUND INFORMATION: Better Living Through Better Eating: Goodwin, Mary T., Montgomery County Health Department, Rockville, Maryland 20852, $2.00.

MATERIALS: 4 x 6 file cards.

PROCEDURE:

1. Type problems, one to a file card. Divide class into groups of five. Distribute a card with the same situation to each group. Have each group appoint a recorder. Allow 5-10 minutes for each problem. (Work on several problems in one class session, or distribute one problem each day for several days.)
2. Following each problem, have class discuss their solutions.
3. Have each group design one "problem" based on their own experiences. Have groups trade problems, work out solutions, and discuss.
4. Although the situations are hypothetical, many of them are designed for follow-up with real actions. Encourage interested students to carry out follow-up suggestions.
5. THE PROBLEMS:

   A. THE WORKING FAMILY: Both your mother and father work long and sometimes irregular hours. You have one sister and one brother. Each of you likes to have an after-school snack; some nights mom and dad aren't home in time to make dinner, or are too tired when they get home to begin preparations immediately. How could the family plan after-school snacks and dinners so that members eat a well-balanced diet?

   * Decide who should take responsibility for planning, shopping, putting away groceries, preparing food, and clean-up--or set up a rotating schedule.
   * Identify nutritious foods that should be easily available for snacks and dinners.

   B. BACKPACKING: It is Spring, and time for an adventure into the hills. The class decides to go on a hike in the country for a weekend. Running water and outdoor camp stoves are available; otherwise all provisions must be carried.

   * Plan a two-day, well-balanced menu and market order for the class.

* List all necessary considerations such as weight, spoilage, animal-proof containers, fluids, etc.

FOLLOW-UP: Test out the best menu on the real hike.

C. BAG LUNCHES: Due to rising cost of food outside the home, bag lunches are becoming increasingly popular in schools, offices, at activities and meetings.

* Draw up a week's menu of well balanced bag lunches; include protein-rich foods, whole grains, fruit and/or vegetables, and milk or yogurt. Be very imaginative using a wide variety of foods in many creative forms. Refrigeration may or may not be available.

FOLLOW-UP:

* Collect the best menus, draw up a flyer with the help of the Art department and publish the menus.
* Distribute them at the PTA meetings, or
* Ask the local food markets if they would publish them and put them in the lunch boxes sold at the stores, or have them available as a handout at check-out counters.

D. DRIVE-IN SURVIVAL: After school or the game you and your friends frequently meet at the local fast food or drive-in restaurant. You are concerned about your diet:

* Can you find a nutritious snack? List.
* What wholesome foods are few in number or missing?
* What would you add to the menus to provide more nutritious foods?

FOLLOW-UP: Send suggestions to appropriate restaurants or have a delegation of students present them to the manager.

E. THE BREAKFAST PROBLEM: School begins at 7:45 a.m. To make the bus you must leave your home at 7:00 a.m. You barely have time to wash, dress, gather up your books, and run. By 9:30 you are famished and have difficulty concentrating on your school work.

* Discuss some ways of coping with "breakfast on the run."

F. ON-THE-MOVE FOOD: You are traveling across country. Your budget is meager. The "cheap" restaurants' food is greasy, boring and unappetizing.

* Draw up a food plan for travel survival. Where would you eat? Where would you purchase food?

G. PICNIC TIME: The weather forecast for the week is for bright, warm and sunny weather. The class decides to have a picnic. A number of students are vegetarians. A pot luck style will give everyone an opportunity to share favorite family recipes, make new recipes, try new foods, learn how to plan for large groups.

* Plan the picnic; discuss who would bring what.

FOLLOW-UP: Test out your plans with a real picnic.

H. SNACKS: You are going to have an "End of School Party." You are inviting all your favorite people, including your nutrition teacher.

* Plan nutritious snacks for this party and future parties.

FOLLOW-UP: With the assistance of your art department, put together a booklet on nutritious snacks, print it and sell it to the PTA, Day Care Programs, after-school programs, co-op nurseries, and party planners.

Activity Eight

Media Messages

OBJECTIVE: To write 30-60 second spots on food and nutrition for the school PA system and public service time on local radio stations.

BACKGROUND INFORMATION: Mayer, Jean: A Diet for Living (1975) (available from Consumer Union, 256 Washington Street, Mt. Vernon, N.Y. 10550, $4 + .50 postage.)

RESOURCES: Media specialists in the school and community. Nutritionists, dentists, physicians, etc.

PROCEDURE:

1. Divide the class into groups of four to six.
2. Have each group research and prepare a 30-60 second "spot" announcement on nutrition for the PA or local radio stations. Use information collected in other activities or one or more of the following suggestions. Be sure foods suggested are nutritious.

   * Game Fare: Get your body in shape for the game by feeding your body well. What's the best way to eat before a major sports event? Consider quick energy, wholesome food, liquids to replace water and mineral loss from perspiration, also "spectator foods" for the loyal fans.
   * After School Treats: Collect favorite nutritious after school snacks from students or have a "super snack" contest. Prepare spots identifying the snacks and recognizing the cooks.
   * Fat Fighters Feasts: Plan low calorie, nutritious snacks and lunches for teens and teachers. Consider some that travel well. Include the approximate number of calories and compare to other foods.
   * Foods of the Famous or Favorites: Collect nutritious recipes and family customs and traditions from famous or favorite persons in the school or community.
   * Locally Grown Food: Prepare spots focusing on locally grown foods, their history, nutritive value and favorite ways of preparing them. Consider spots that would tie into a day to honor the local farmers or community gardeners.
   * Holidays: Develop "spot" announcements on holiday celebrations including local flavor. Ask old-timers how holidays were celebrated, including food and customs. Record some of the more colorful ideas for spots.
   * Vending Machines: Design spots urging better food in vending machines.
   * Information from almost any other activity could provide the basis for spots.

Activity Nine

Nutrition Education Materials--Knowledge Is Power

OBJECTIVE: To analyze nutrition education materials used by Home Economics, Early Childhood, Health, and Science Teachers for objectivity and accuracy.

MATERIALS: Books, magazines, pamphlets, posters, resource catalogues, recipes.

PROCEDURE:

1. Collect resource materials used by teachers involved in nutrition education. If the teachers are developing their own materials and do not use materials from vested interests, write organizations, agencies and companies producing nutrition materials. (SUGGESTED SOURCES: USDA; large food corporations; trade associations such as National Confectioners Association; Pickle Packers Institute; Sugar Association; health organizations such as American Dental Association, American Heart Association; see Pepe, Thomas J., Free and Inexpensive Educational Aids for further listings).

2. Have students assess materials' reliability using the following guide:

   * What is the source--government, private industry-funded, trade associations (such as the Dairy Council), public interest groups, government and industry collaborative efforts, foundations funded by the food industry (such as the Nutrition Foundation)?

   * Is the information presented consistent with promoting good health and social well-being through good eating? Is there a recognition that there are good, fair and poor foods? Or, that some foods promote health, others may be potentially harmful?

   * Does information deal solely with nutrient deficiencies? Does it neglect other major problems of the American diet, such as excess consumption of sugar and saturated fat, and inadequate consumption of fiber? Are differences between natural and highly processed foods discussed?

   * Is the information complete? In discussing cereal, are the effects of refining discussed, or the role of fiber in diet? Is cholesterol discussed with dairy foods?

   * Are statements supported with acceptable evidence, or is incomplete or misleading information included? For example, is ice cream presented as more or less comparable to milk when it is, in fact, high in sugar and saturated fat?

   * Are educational materials used that promote a brand name? Should this type of advertising be accepted in schools?

3. Are free food samples given to schools for use in the classroom? Have students check the nature of the samples and the ingredients. Are they nutritionally and ecologically sound? Are they consistent with your goals, or are they designed to encourage overconsumption? Tabulate responses and mail them to manufacturers.

4. Are recipes used that require a particular brand name ingredient? Do recipes include expensive convenience foods as ingredients, such as instant puddings in desserts or onion soup in sauces or main dishes?

5. DISCUSS: Who should be developing nutrition materials for the school? Should so vital a subject be left in the hands of vested interests? Who pays for "free" materials?

6. Have students set up a display of biased educational materials and samples provided by vested interests. Have them circle or use arrows to indicate problems such as inaccuracies, sales pitches, product promotion, overemphasis on a particular food group, excessive use of sugar, saturated fats and potentially harmful food additives. Contrast this with some excellent material that demonstrates objective nutrition and food information, designed to assist the student with responsible personal food choices and develop essential skills. Have interested students present the display to the school board and ask for a policy decision on nutrition education materials.

Activity Ten

Cooking for Nutrition

OBJECTIVE: To identify useful and self-sufficient cooking skills. To design a teaching lesson for one skill.

RESOURCES: Home Economics teacher, cafeteria staff

PROCEDURE:

1. Have students list the kinds of food skills they have acquired at home or in home economics class. List foods they have learned to prepare, and preparation, cooking, and storing techniques.

2. DISCUSS: What types of skills and information would you like to learn? Do these promote self-sufficient cooking and good nutrition? Have students list the skills they would like to learn.

3. Have students interview parents or financially independent friends. Find out what skills acquired at home or in school were the most useful to them. What skills do they feel are most valuable to acquire? What skills are a waste of time? Have students compile the results and evaluate them for appropriateness today.

4. Based on students' lists and interviews, have the class brainstorm a master list of skills and information. Suggest other useful skills if not mentioned by students (bread making, sprouting, vegetarian main dishes, imaginative use of grains, yogurt making, quick wholesome snacks, conservation of nutrients in food preparation, use of stock and leftovers, efficient preparation of whole foods and inexpensive staples.)

5. Have class form groups of six to eight students. Have each group choose a skill and be responsible for conducting a class on it. Encourage them to seek information from books, adults and friends, home economics teacher, cafeteria staff, etc.

Activity Eleven

Getting Control of Vending Machines

OBJECTIVE: To get wholesome, nutritious food in school vending machines.

BACKGROUND MATERIAL: "Organizing for Nutritious Vended Food" (Send self-addressed envelope to CSPI, 1755 S Street, N.W., Washington, D.C. 20009.)

PROCEDURE:

1. INTRODUCTORY COMMENTS: Busy lifestyles have led to fast foods and eating on the run. Vending machines are everywhere. Most food vending machines have one thing in common--junk foods. Vending machines and junk food have been a successful team for over thirty years. The dollar volume of vending machine sales has skyrocketed from less than $1 billion in 1953 to $5.5 billion in 1974. Eighty percent of that $5.5 billion was devoted to items low in vitamins, minerals and protein--soda pop, coffee, candy bars, chewing gum. Sixty percent of the dollar volume was spent on soda pop and coffee, and 20 percent on candy bars and other confections.

   Students must support any effort to change the food in machines. Before reaching any conclusions about vended food, students should consider that our wants are strongly influenced by advertising. If milk were as extensively and appealingly advertised as the "colas," the demand for milk would probably be greater. Students should be aware that painful and debilitating diseases may be the eventual outcome of an improper diet. Once the junk has been replaced by fresh fruit, nuts, yogurt, whole grain snacks, fruit juice, and milk, students might discover that they actually prefer these tasty and nutritious snacks.

2. Have the students choose a specific target. Work towards getting soda pop, candy bars, and other junk food banned from school vending machines; or getting at least half of the slots of every vending machine in the community stocked with nutritious products.

3. Have the students solicit the support of health professionals in the community before announcing the campaign. Doctors, nutritionists, and particularly dentists should be willing to publicly support the project. Also contact such organizations as the PTA and consumer groups.

4. Have students prepare signs to stick on vending machines promoting the campaign.

5. Since the school board will have to vote on the proposal, have the students lobby individual board members prior to the meeting at which the issue will be raised. Stress the harmful effects of consuming too much sugar and acquaint them with some of the facts contained in CSPI's vending packet. Point out that the junk food frustrates the parents' and the school's attempts to teach children good eating habits.

6. If the students decide to work on a community-wide Good Vend program, they should inform the local vendor(s) that they definitely want to have better foods. The students should point out that good foods are available in vendible forms. Unsalted nuts; whole grain snacks, such as granola; fruits; hard boiled eggs; yogurt; milk; and fruit juices can be easily purchased by the local vending company. Since sugar prices have jumped, these wholesome products cost about the same as products currently vended. The vendor will be concerned that the new foods won't sell as well as the traditional ones.

To combat this fear, suggest that nutrition information be posted on vending machines. The vendor should be reminded that favorable publicity will probably accompany the stocking of good foods. If you are turned down flat, proceed to #7.

7. When their plans are well formulated, students should contact the local press, including newspapers, radio and TV stations. Have a group spokesperson who is prepared to appear on a local radio or TV talk show. The press has shown a great deal of interest in the Good Vend campaigns that have been launched in the past. Encourage the public, through the press, to support the project. Circulate a petition for good food and/or urge everyone to boycott junk food vending machines.

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Part B: Nutrition and Diet-Related Disease

In 1972 George Briggs, Professor of Nutrition at the University of California (Berkeley), in a statement before the U.S. Senate Select Committee on Nutrition and Human Needs, estimated that malnutrition and food abuse account for about $30 billion a year, or about 30% of health care costs in America. Malnutrition can result from eating either too few or too many nutrients. Today many Americans are suffering the consequences of overeating. The following are some of the diseases associated with poor diets:

DISEASE	MAJOR DIETARY CONTRIBUTING FACTORS	PREVENTIVE DIETARY MEASURES
Coronary heart disease	*dietary cholesterol *saturated fat *excessive calories	*carefully controlled caloric intake *dietary fat intake limited to 30-35% of calories *decreased amount of saturated fat *strict limitation of cholesterol
High blood pressure (Hypertension)	*excessive calories/obesity *excessive dietary salt	*carefully controlled caloric intake *reduced salt intake
Diabetes mellitus	*excessive calories/obesity *excessive sugar consumption	*carefully controlled caloric intake *avoidance of refined sugar
Obesity	*excessive calories and lack of physical activity (with result that caloric intake exceeds expenditures)	*carefully controlled caloric intake
Dental caries	*excessive sugar consumption *consumption of forms of foods high in sugar that stick to the teeth	*avoidance of highly refined sugar *increased fruit, vegetable, and legume consumption
Cirrhosis of the liver	*excessive use of alcohol	*avoidance or reduction to small amounts of alcohol intake
Cancer of the colon	*high-fat and low-fiber diets	*dietary fat intake limited to 30-35% of calories *increased intake of whole grain (or bran), raw fruit and vegetables
Constipation Diverticulosis of the colon	*inadequate intake of dietary fiber	*increased intake of whole grain and bran, raw fruit and vegetables
Nutritional anemia	*inadequate intake of dietary iron, folic acid, or B-12 (Vitamin B-12 intake apt to be low only in strict vegetarians)	*adequate intake of iron, vitamin B-12, and folic acid

Nutrition and Dental Health

Dental disease is perhaps the most clearcut example of the relation of diet to health. A well-balanced diet is essential for the proper structure and composition of the tooth and its supporting tissue. Good dental care must begin before birth and be continued throughout life. A poor pre-natal diet has a significant effect on tooth development and orderly growth of teeth. A diet high in sugar--particularly in foods that stick to teeth--contributes to dental decay and possibly gum disease.

Three factors contribute to dental caries (tooth decay): hereditary susceptibility, decay-producing bacteria, and fermentable dietary sugar. About 99% of Americans are genetically susceptible to tooth decay. Bacteria present in the mouth break down sugars to acids that cause tooth decay. These sugars are incorporated into a sticky bacterial film, called dental plaque, that adheres to the tooth surface. The plaque becomes the workshop for the bacteria. Dental disease can cause pain, infection, facial disfigurement, chewing impairment, speech impairment, and malnutrition. It is troublesome, incapacitating, and expensive.

Proper care of teeth in infancy, childhood and adolescence is especially important because children, and particularly adolescents, are the most susceptible to dental caries. Children learn to want sweet food very early in life; added sugar comprises as much as 44% of calories in some commercial baby foods. The "sugar coated" TV commercials beamed at young children support this "sweet tooth" habit. The school age child is frequently tempted by sweets in the vending machines or desserts served at lunch. Such encouragement to consume unwholesome foods exacerbates our innate preference for sweets. Adolescents eat as much as 140 pounds of sugar a year.

About 98% of Americans have decayed, filled or missing teeth. The national dental bill is about $5 billion. About $2 billion is spent on repairing decayed teeth. According to the National Institute of Dental Research, America's annual dental bill would be an astonishing $13 billion if everyone got their teeth fully repaired.

The best solution to the problem is prevention and control. Consumption of refined sugar should be eliminated or drastically reduced, especially between-meal sweets and sticky sweets. Foods rich in cellulose and water (raw fruits and vegetables) should be eaten frequently, as they help clear sugar from teeth.

The proper diet should be combined with good oral hygiene and other preventive measures. Fluorides incorporated into developing teeth appear to increase the tooth's resistance to dental decay. Forty-three percent of people in the United States drink fluoridated water. Everyone should carefully brush and floss their teeth to help keep healthy teeth and gums.

Heart Disease and Stroke

Coronary heart disease kills 685,000 Americans yearly and disables 285,000 more. It is the No. 1 health problem in the United States today, accounting for about 40% of deaths. In recent years increasing numbers of young and middle-aged people have suffered heart attacks. Prevention is the best solution for everyone, but especially those with a family history of heart disease. Research has identified several factors contributing to heart disease:

- Obesity
- Lack of exercise
- Genetic background
- Cholesterol
- Dietary fat (especially saturated fat)
- Cigarette smoking and air pollution
- High blood pressure
- Diabetes
- Anxiety
- Diets high in sugar

Several dietary factors contribute to heart disease. Many studies have shown that the higher the level of cholesterol in the blood, the greater the risk of heart disease. Most researchers agree that foods high in saturated fat and cholesterol contribute to elevated blood cholesterol levels.

* Saturated fat is usually fat of animal origin; however, the unsaturated fat that occurs in foods can be made into saturated fat in the laboratory by adding hydrogen ("hydrogenation"). This produces a solid fat at room temperature, which has a longer shelf life and doesn't turn rancid. Coconut oil and palm kernel oil are naturally occurring saturated fats from vegetable sources. (See "Fats" in Chapter 2A.)

* Cholesterol is a fatty substance which is manufactured by the body. It is present in foods of animal, but never vegetable, origin. It is most abundant in eggs, liver, kidney and brains; a serving of meat contains moderate amounts of cholesterol. The following chart based on USDA figures indicates the cholesterol content of common foods:

CHOLESTEROL CONTENT OF COMMON FOODS

Food	Serving Size	Cholesterol (milligrams)
Milk, skim	1 cup	5
Cottage cheese, uncreamed	1/2 cup	7
Lard	1 Tbsp.	12
Cream, light table	1 fl. oz.	20
Cottage cheese, creamed	1/2 cup	24
Cream, half and half	1/4 cup	26
Ice cream (approx. 10% fat)	1/2 cup	27
Cheddar cheese	1 oz.	28
Milk, whole	1 cup	34
Butter	1 Tbsp.	35
Oysters, salmon	3 oz., cooked	40
Clams, halibut, tuna	3 oz., cooked	55
Chicken, light meat	3 oz., cooked	67
Beef, pork, lobster, chicken, dark meat	3 oz., cooked	75
Lamb, veal, crab	3 oz., cooked	85
Shrimp	3 oz., cooked	130
Beef heart	3 oz., cooked	230
Egg	1 yolk or 1 egg	250
Liver: beef, calf, pork, lamb	3 oz., cooked	370
Kidney	3 oz., cooked	680
Brains	3 oz., raw	more than 1700

Hypertension, or high blood pressure, affects about 25 million Americans and is a major risk factor in heart attacks and strokes. Most persons suffering hypertension are unaware that they have the problem prior to seizures. Although causes are not fully understood, obesity is clearly related and diets very high in salt aggravate hypertension. The typical American diet is high in sodium. The sodium intake (largely from table salt, sodium chloride) of most adults varies from 7 to 30 grams or more per day, yet 2 grams per day is sufficient to satisfy the body's sodium requirement. Many processed foods are high in salt. Many canned and frozen vegetables are processed using salt.

Certain dietary steps will lower the risk of heart attacks and stroke:

- Gradually move toward a diet high in legumes, whole grains, vegetables and fruits, and low in fat and cholesterol
- Carefully control caloric intake to prevent obesity
- Reduce the percentage of fat in the diet from the average 40-45% of total calories to no more than 30-35%. Use sparingly foods comparatively high in fat: meat, salad dressings, potato chips and similar "snack" foods, fried foods, rich desserts. Use low-fat or non-fat animal products such as skim or low-fat milk, egg whites, low-fat cottage cheese.
- When the amount of fat in the diet is reduced, the caloric difference should be made up from carbohydrates. Consume complex carbohydrates, such as whole grain cereals and bread, vegetables and fruit. Avoid or limit the use of refined sugar contained in candy, sweetened drinks, and other sweets.
- Reduce cholesterol by decreasing use of meat, shellfish, cream, ice cream, butter. Use skim milk, skim milk cheeses, and vegetable oils.

Diabetes Mellitus

Diabetes mellitus is an increasingly common disease, ranking fifth as a cause of death by disease in the United States. Diabetes is the major cause of blindness in the United States, and contributes to disability from coronary heart disease and kidney failure, and premature death. According to the National Commission on Diabetes, 10 million Americans have diabetes. By 1980, authorities predict 1 in 5 persons will be diabetic or carry the genetic trait.

Both dietary and genetic factors seem to be involved in diabetes. The major dietary factor associated with diabetes is obesity. In addition, evidence suggests that sugar plays a role in the development of diabetes for those who are genetically susceptible.

A plan for the prevention and treatment of diabetes follows:

- Adjust calories intake to achieve desirable weight.
- Obtain regular exercise
- Avoid refined sugar
- Eat regular meals and avoid periods of fasting and feasting
- Eat adequate amounts of natural foods such as whole grains, fruits and vegetables, which provide trace minerals such as potassium, calcium, and chromium involved in the utilization of sugar.
- Decrease total fat in diet, saturated fat and cholesterol as for prevention of heart disease, because most diabetics die of cardiovascular disease.

Labeling of sugar content in products would be helpful to diabetics and other concerned consumers.

Obesity

Americans are preoccupied with weight reduction. While a few extra pounds will not hurt anyone, large numbers of the mildly overweight are worried. In fact, advertising pressures have resulted in many people striving to be underweight. We need to reevaluate our images of beauty, and how they have been formed, before we determine our proper weight.

To be mildly overweight is not a problem; to be roughly 20 percent or more overweight is considered hazardous. Obese individuals face:

- Lower life expectancy
- Three times the rate of diabetes as people of normal weight
- Twice the normal rate of high blood pressure and gall bladder disease
- Greater incidence of arthritis, lung disabilities, heart disease, and some cancers

Both the condition of obesity, as well as the factors contributing to it (lack of exercise, a high-calorie, high-fat diet) are implicated in heart disease and other degenerative illnesses. The adverse effects of obesity, like diabetes and hypertension, disappear for most people with loss of excess fat and other dietary improvements.

Some medical evidence suggests that the fat tissue of persons who became obese in childhood differs fundamentally from persons who become obese during adult life. Some researchers believe that the number of fat cells in fat tissue is determined early in life and that overeating during this critical early period may give rise to a large number of fat cells that never can be lost. Only the size of the cell can be reduced, according to this theory. Persons with juvenile-onset obesity have a harder time losing weight and keeping it off than other obese persons.

A large percentage of the juvenile obese have psychological problems as well. They feel others look upon them with contempt; they are uncomfortable with their bodies. Yet losing weight may be difficult if some or all of the following conditions are present:

* obesity developed early in life
* family history of obesity
* eating as a means of coping with anger, frustration, anxiety and hostility
* unsuccessful past attempts at weight reduction
* unwillingness of parent or child to cut out high-calorie, low-nutrient foods
* inability to exercise on a regular basis
* inability to afford low-calorie foods

Each overweight individual has to come to grips with his or her own problem and consciously decide whether or not he or she is interested in and/or able to lose weight.

Choosing a reducing plan is a difficult question for the obese. One of the more unfortunate results of obesity is the growth of the "diet industry." Chronically obese persons are usually the victims, in their desperate attempt to shed unwanted pounds. The "diet" industry, offering reducing belts, saunas, creams, powders, miracle pills, fad diets and exercise devices, is an estimated $10 billion business. Bookstores and magazine racks are loaded with descriptions of "quick-loss" diets. By following popularized diets, obese people run the risk of further jeopardizing their already endangered health. Such diets as the no-carbohydrate diet, the water diet, the egg diet, the starvation diet, the crash diet, the loving care diet, the raw foods diet, the eat-all-you-want diet, the bread, cheese and wine diet, the hot dog diet, and the orange juice diet are imbalanced and potentially dangerous. In order to feed our bodies well, we need a variety of wholesome food. Most of these bizarre diets feature a disproportionate amount of one type of food and exclude others containing important nutrients.

In the final analysis, there is no magic method of weight reduction. A well-balanced diet with a reduction of caloric requirements by 500 calories per day should result in a weight loss of one pound per week. This, along with regular exercise and some psychological support, is the safest method of weight loss.

Cancer

Cancer is the second leading cause of death in the United States. In some states, cancer is the major cause of death of women from age 18-45 years. According to a National Cancer Institute report, about 80-90% is caused by various environmental factors. Cancer-causing agents enter our bodies from the air we breathe, the water we drink, and the food we eat. Cigarette smoking is the major cause of lung cancer, the number one cause of cancer deaths in the United States. Research has emphasized cancer detection and cures rather than prevention; research on cancer-causing agents in food is scant. Even if data is incomplete, the consumer has the right to know what may be potentially dangerous, weigh the risks, and make an informed decision.

Research indicates that nutrition and diet are among the environmental factors related to cancer. According to Dr. Ernest L. Wynder, President of the American Health Foundation, diet may cause, directly or indirectly, half of all cancers among women and 30% among men. Studies in humans indicate that diets high in fat may contribute to breast and colon cancer. Low intake of dietary fiber may also contribute to cancer of the colon. Obesity appears to be a risk factor in laboratory animals and epidemiological studies of humans relate obesity to cancer of the breast and gallbladder. Obesity is associated with cancer of the colon in men and cancer of the uterus in women.

Research has indicated that some food additives are carcinogenic. The food colorings FD & C Green No. 1, Red No. 1, Violet No. 1; cyclamate; dulcin;oil of calamus; safrole; and thiourea have been banned by FDA after research showed these substances cause cancer in laboratory animals. Several intentional additives still in use may be carcinogenic under certain circumstances. Sodium nitrite, an additive used in cured and processed meats, may react chemically with other substances to create nitrosamines, a potent family of carcinogens.

Incidental additives, such as chlorinated hydrocarbons found in some pesticides, and polyvinyl chloride (PVC) used in food packaging materials which may leak into foods, have been linked to cancer. DES, which farmers feed to cattle to produce a larger animal in a shorter time, has been linked to cancer. Though banned in Canada and many other nations, DES was still used in the United States in 1976. A number of countries have refused to purchase U.S. beef because of DES residues. The head of the National Cancer Institute recommended in 1975 that pregnant women avoid beef liver because of the possibility of its containing DES.

Evidence of the relation of diet to cancer is fragmentary and much more research is needed. Present evidence suggests a diet adequate but not excessive in calories, lower in fat than the American diet, and generous in fiber as the best way of preventing diet-related cancer.

Constipation, Diverticulosis and Other Diseases of the Colon

Dietary fiber (also called "roughage" or "bulk") includes cellulose, pectin, and other carbohydrates that the human body digests poorly or not at all. Fiber is present in the outer coatings or bran of grains, therefore brown rice and whole wheat bread contain fiber, but it has been largely removed from white rice and white bread. All fruits and vegetables also contain varying amounts of fiber. The fiber content of the average diet is dangerously low. This deficiency may be the chief cause of several illnesses of the digestive system and may be a secondary factor in other health problems.

Persons on low-fiber Western diets have relatively small, hard and infrequent stools. Such stools result in the build-up of high pressure in the colon, causing diverticulosis (outpouchings of the intestinal wall). These outpouchings can become inflamed, resulting in diverticulitis. Thousands of Americans develop this serious, but unnecessary disease every year. Adequate fiber produces a large, soft stool propelled without increased pressure and subsequent risk of diverticulosis.

Research also relates constipation to lack of fiber in the diet. Many Americans, particularly the elderly, are afflicted with this discomforting disease, as evidenced by the more than $300 million spent annually on laxatives.

Fiber intake can be increased simply by eating more whole grain foods, bran, legumes, vegetables and fruit.

Liver Disease

Liquor consumption is on the rise. Per capita consumption of beer and distilled liquor has increased by about 33% in the last ten years; wine consumption has increased 70%. Americans spent $21.5 billion on alcohol in 1974. For the old it is an escape from the pressure and pain of daily life. For the young it may be a thirst for new adventure. A serious look at the health implications to our bodies and society may force us to think and make a conscious choice before we drink.

Excessive alcohol ingestion contributes to cirrhosis of the liver. Nutrition is particularly important in liver disease because nutritional status affects the likelihood of recovery and the duration of liver disease. In general, individuals suffering from liver disease need a diet high in all nutrients; as much as 20% more calories, vitamins and proteins than usual are needed because of poor utilization by the body. Trace minerals may be depleted, especially zinc, magnesium and manganese.

About 15 million adults in the United States consume enough alcohol to account for much of their daily caloric intake. All alcoholic beverages contain 50-150 calories per portion with almost no additional nutrients. As alcohol use increases, the amount of nutritious foods usually decreases. The circumstances of alcohol consumption favor nutritionally inadequate snack foods and irregular meals. An alcoholic's diet often contains too few calories and too little protein, B vitamins, and trace minerals such as magnesium and zinc. Because alcohol itself damages the liver, the only way to eliminate the risk is to eliminate or greatly reduce the consumption of alcohol.

Nutritional Anemia

Nutritional anemia results from the absence or poor absorption of any nutrient essential to the formation of normal red blood cells. Anemia results in paleness, weakness, lack of appetite, and general slowing of vital functions of the body. The most common causes are deficiency of dietary iron or folic acid. Anemias have also been associated with inadequate intake of vitamin B-6, a catalyst in the synthesis of hemoglobin and vitamin C, which increases pernicious anemia, a condition marked by not only low hemoglobin levels and abnormal red blood cells, but also by damage to the nervous system.

The most common form of anemia in this country is iron deficiency anemia. Iron is a vital component of hemoglobin. The Health and Nutrition Examination Survey, U.S. 1971-1972 (HANES) showed that about 95% of the children ages 1-5 and females ages 18-44 had iron intake values below the standard RDA . Women are particularly susceptible to anemia because of menstrual bleeding. About 60% of those 60 years and older had substandard iron intakes. Poor people had the highest incidence of iron deficiency.

Several conditions may increase the risk of anemia: The need for iron and other nutrients increases during periods of growth, early childhood, adolescence, and pregnancy. Oral contraceptives may increase the need for pyridoxine (B-6) and folic acid in some women. Because vitamin B-12 occurs only in foods of animal origin, persons who adhere to a strict vegetarian diet over a long period of time are likely to be deficient in this vitamin. Certain therapeutic drugs and chemicals also increase the need for vitamin B-12.

To prevent anemia, foods rich in iron, folic acid, pyridoxine, vitamin B-12 and vitamin C are essential. Some iron-rich foods (also containing folic acid and pyridoxine) are organ and other meats, soybeans, dark green leafy vegetables, dried fruit, and whole grains. Vitamin B-12 is found in liver, eggs, cheese, milk and other foods of animal origins. Rich sources of vitamin C are citrus fruits, green leafy vegetables, and tomatoes.

Activity One

Family Tree

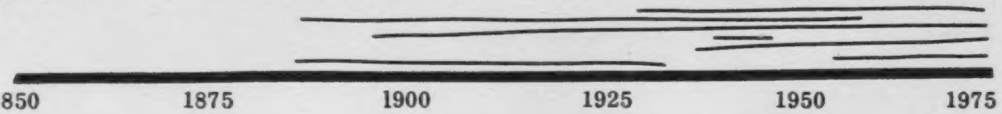
OBJECTIVE: To examine the patterns of diet-related disease in students' families.

BACKGROUND INFORMATION: Literature from the American Heart Association, National Heart and Lung Institute, National Institute of Health, National Dairy Council, Center for Disease Control, Atlanta, Georgia.

RESOURCES: Physicians, medical students, nutritionists, representatives of health department, representative of local chapter of American Heart Association

PROCEDURE:

1. Ask students to chart their family trees, indicating each family member as far back as information is available. List the name, date of birth, date of death and cause of death. Place an asterisk by diet-related disease. Are patterns evident? What are possible environmental or genetic causes?
2. Have each student calculate the life span of each family member, and transfer the information to a time line. (If families are large, limit the data collected to parents, grandparents, and great grandparents.)



3. Based on individual data, have students compile a summary chart for the class. Determine major causes of death, and average life spans for each twenty-five year period in which information is available.

CAUSES OF DEATH

Birth Date	Major Causes	Average Age
1800		
1825		
1850		
etc.		

4. In general, prior to the 20th century infectious diseases caused many premature deaths; today degenerative diseases are the major causes of death. Divide the class into groups of 4-6. Discuss both personal and class findings:

   * Average age of death of males and females
   * Major causes of death in each 25-year period
   * What factors have changed from the earliest date to the present

- * Has the average age of family members increased or decreased over the years? Why?
- * How many relatives died from diet-related illnesses before 1945 or 1950, and since 1945 or 1950?

5. Invite a resource person to discuss with the class changing health and mortality trends in the United States.

Activity Two

Have a Good Heart

OBJECTIVE: To evaluate potential risk of heart disease; to identify how persons can reduce the risk of coronary heart disease.

BACKGROUND INFORMATION: Gilmore, C. P.: "The Real Villain in Heart Disease," FFPNFP, Mayer, Jean: A Diet for Living (1975) (available from Book Dept., Consumers Union, Orangeburg, N.Y. 10962, $4.00 + $.50 postage).

RESOURCES: Physician, nutritionist, school nurse, representative of local chapter (or borrow films) from American Heart Association, National Heart and Lung Institute (National Institutes of Health), National Dairy Council. Compare and discuss.

MATERIALS: Contributing Factor Worksheet.

PROCEDURE:

1. Show a film, invite a resource person, and discuss factors contributing to heart disease.
2. Have class list the major risk factors for heart disease. Compose a "Contributing Factor" chart such as the following:

	Applies to:			
Contributing Factors	Mother	Father	Me	How She/He/I Can Change
Heredity				
Overweight				
Hypertension				
Elevated Blood Cholesterol*				
Elevated Blood Triglycerides*				
Diet High in Saturated Fats				
Diet High in Cholesterol				
Lack of Exercise				
Diabetes				
Cigarette Smoking				
Family history of heart attacks in middle age				

*SOME COMMUNITIES HAVE FACILITIES FOR CHECKING BLOOD CHOLESTEROL AND TRIGLYCERIDES LEVELS WITHOUT CHARGE. CHECK WITH LOCAL HEALTH DEPARTMENT, HEART ASSOCIATIONS, MEDICAL SCHOOLS OR MEDICAL SOCIETY, AND MAKE INFORMATION AVAILABLE TO STUDENTS. IF THE BLOOD TESTING IS NOT POSSIBLE, HAVE STUDENTS CONCENTRATE ON DIETARY AND OTHER ASPECTS.

3. Have students determine which factors apply to themselves or either of their parents. Encourage them to obtain information and discuss factors with their parents. Discuss preventive measures and why or why not parents and students are willing to try them.

4. In class, have students form small groups and discuss how their parents could alter diet and lifestyle to decrease the risk of heart disease. Which changes are parents most willing to make? Which changes are most difficult? Why? What habits can students be developing to lower risk of heart disease.

Activity Three

Is All Food Good Food?

OBJECTIVE: To develop an awareness that some foods contribute to health and others contribute to diet-related disease.

MATERIALS: An assortment of food labels, collected from home, neighbors, home economics class, school cafeteria, etc., 20-25 labels per group.

PROCEDURE:

1. Divide the class into groups of 4-6. Divide the labels among the groups. Have students:
   - * Circle in red foods containing hydrogenated fats
   - * Circle in black foods containing added sugar
   - * Circle in blue foods containing salt

   Have each group calculate in what percentage of foods these ingredients were added.

2. Have students underline bread, cereal and other grain products composed of refined grains (rather than whole grains). Have students calculate the percentage of grain products that were refined.

3. Compile results from the entire class.

4. DISCUSS: What types of foods contain each of the added ingredients? Which foods contain all three? What are some of the reasons these ingredients are added to so many foods? In which foods do you least expect to find any of the added ingredients? What are advantages of whole grain foods? Why aren't they used more widely? How can you alter your diet to reduce quantities of foods that increase risk of heart disease and other diet-related disease? (Emphasize that the amount of ingredients such as sugar, salt, hydrogenated fat and refined flour consumed is crucial. A small amount of such ingredients is not harmful to health.) How can you increase healthful foods that reduce the risk of disease?

Activity Four

Getting Control of Your Weight

OBJECTIVE: To understand the factors involved in body weight gain and weight control. To determine one's personal potential for weight loss or weight gain.

BACKGROUND INFORMATION: Mayer, Jean: Overweight: Causes, Cost and Control; USDHEW, USPH: Obesity and Health; Spark, Richard: "Fat Americans," FFPNFP.

MATERIALS: Scale, large mirror, measure, "What Is My Size?" Questionnaire.

PROCEDURE:

1. Have students fill in the following questionnaire:

WHAT IS MY SIZE?

Name: Date:

A. Age

Height

Weight

B. BODY BUILD

_____ endomorph (round and soft) _____ ectomorph (slender)

_____ mesomorph (muscular) _____ combination (specify)

C. Do you consider your present weight:

a. Too light _____ c. Ideal _____

b. Too heavy _____ d. Plump _____

D. Do you wish you were:

a. lighter _____ b. heavier _____ c. the same _______

E. How do you feel about the way you look?

F. Do you gain weight:

a. easily _____ c. slowly ______

b. moderately _____ d. very slowly _____

G. Do you lose weight:

a. easily _____ c. slowly _____

b. moderately _____ d. very slowly _____

H. Was your weight as an infant:

a. too light_____ b. too heavy c. ideal _____

I. Was your weight as a child:

a. too light _____ b. too heavy _____ c. ideal _____

J. Has your weight changed significantly in the past:

a. year _____ b. 2 years _____ c. 5 years _____

K. Is your mother obese? _____ Is anyone in her family obese? _____

L. Is your father obese? _____ Is anyone in his family obese? _____

M. Is your level of exercise:

a. very active _____ b. moderate _____ c. sedentary _____

N. When under stress, do you eat:

a. more _____ b. less _____ c. the same _____

O. Do you feel you overeat at certain times:

a. after school _____ b. night eating syndrone _____

c. binge eating _____

P. Do you eat on a regular basis? _____

Or when food is readily available? _____ Or snack all day? _____

Q. List your 20 favorite foods.

R. Check familial disease and problems associated with obesity:

_____ diabetes _____ coronary heart disease

_____ gallstones _____ hypertension

_____ gout _____ shortened life span of relatives due to obesity

Have students form triads and discuss: Do you have a weight problem? What factors contribute to it? How can you lose weight? Who or what has contributed to your feelings about your weight?

2. Getting control of my weight:

If weight loss is desired, or if students are at risk of gaining weight in the future, have them fill out:

A. Present Weight _____ Ideal Weight _____ Present Caloric Intake _____

B. Have students list foods they can eliminate to reduce caloric intake.

TOTAL CALORIES _______

C. Are you willing to increase exercise? Examine Column One of the chart, "Form of Activity." Keep careful track of exactly how you spend your time on an average day. Use the chart to calculate the amount of calories you use on an average day.

D. How could you increase exercise in order to lose weight or maintain a desirable weight? What forms of exercise could you add to your daily life? Make some estimates of added time you could spend exercising, and re-calculate your chart to see how many calories you would use. How many additional calories could you expend? (Desirable weight loss is one to two pounds per week. 3500-4000 extra calories must be burned to lose one pound of body fat.)

3. Based on the answers to the questionnaire, have students draw up a brief plan for weight loss or maintenance. Consider both changes in exercise and caloric intake. In small groups have students discuss their plans.

EXERCISE AND WEIGHT LOSS

Form of Activity	Estimated Calories per Pound per Hour at ages 12-18		Hours/Day		Calories/ Pound		Weight		Calories Expended
Sleeping	0.5	x	______	=	______	x	______	=	______
Sitting Quietly (reading, writing, eating, sewing, watching TV, study, school classes)	0.9	x	______	=	______	x	______	=	______
Light Exercise (dressing, typing, playing piano, driving car, dishwashing, light laundry, cooking, light housework)	1.2	x	______	=	______	x	______	=	______
Moderate Exercise (bicycling, walking, active housework, or work like clerking which requires bending and stretching, baby sitting when child is active, gym)	1.9	x	______	=	______	x	______	=	______
Active Exercise (dancing, skating, playing pingpong, horseback riding)	2.7	x	______	=	______	x	______	=	______
Very Active Exercise (running, swimming, basketball, tennis)	4.7	x	______	=	______	x	______	=	______
TOTALS									══════

Activity Five

The Right To Be Me

OBJECTIVE: To analyze societal attitudes towards weight. To examine alternate solutions to weight problems.

BACKGROUND INFORMATION: Berland, Theodore: Rating the Diets.

MATERIALS: Magazines, newspapers, TV commercials, art history books .

PROCEDURE:

1. INTRODUCTORY COMMENTS: Obesity is a very complex problem. Persons who are obese from childhood may have extreme difficulty losing weight. Weight control may be a more realistic goal. Have students discuss "the right to be me." People come in different sizes, shapes and colors. Yet advertising and the media set up a homogenized image of beauty that locks out those who don't fit its images.
2. Form five groups. Have each group research American attitudes and preoccupations with weight. Present findings to the class. Suggested topics:
   - high calorie and empty calorie food ads (and the people in them)
   - reducing device ads
   - the image of beauty in ads
   - popular diets
   - sizes and shapes used by artists throughout history to represent beauty (use art history books or survey the collection at your local art museum)
3. DISCUSS: What is beautiful? Who appears to set the standards in the past and present? Who is making a profit in "body" culture? How are women portrayed in art, ads and fads? How are men portrayed?
4. Have students write "Dear Abby" letters with their concerns about weight. Have pairs of students trade letters and respond with ways to cope. Have three pairs form a group and discuss problems and solutions.
5. Have each pair of students analyze one popular diet. Is it balanced? What nutrients or important foods are missing? Does it establish continuing habits of good eating or is it a "crash" diet?

Activity Six

The Booze Problem

OBJECTIVE: To determine why people drink alcohol. To identify health problems associated with alcohol. To study drinking habits in the community.

BACKGROUND INFORMATION: National Nutrition Policy Study, Part 6, Nutrition and Health, U.S. Senate Hearings, U.S. Senate Select Committee on Nutrition and Human Needs.

PROCEDURE:

1. Divide class into groups of 6-8.
2. Have each group discuss:
   - * How do you feel about drinking beer? wine? distilled spirits?
   - * Why do people drink booze?
   - * What does booze do to your body?
   - * What does booze do to the sense of self-reliance, and personal control?
3. Have each group choose a research topic:
   - * How much liquor is sold in the neighborhood? (Phone wholesale distributors for the information.)
   - * How many bars and restaurants serve liquor? Survey a sample of the student body to determine how many have liquor available at home.
   - * What are the facilities for taking care of alcoholics in the community? (Contact the local health department for the information.)
   - * What is the incidence of liver disease in the community? Number of deaths? (Contact the health department, vital statistics section.) What dietary treatment are patients receiving?

   (If community information is too sensitive to obtain, national data is available from the National Clearinghouse on Alcohol Abuse, Rockville, Maryland 20852.)
4. Have each group present its research to the class. Encourage them to produce graphs and tables with data.
5. Discuss results. Is drinking a problem in our community?
6. Have a group of interested students prepare a brief article for the school or local newspaper.

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Activity Seven

Diet and Tooth Decay

OBJECTIVE: To identify dietary factors in dental disease prevention and control.

BACKGROUND INFORMATION: Nizel, A.: "Sugar and Tooth Decay," FFPNFP.

PROCEDURE:

1. Have students determine:

   - about how much money has been spent repairing your teeth in the last few years.
   - how many decayed, filled, or missing teeth do you have? (A 1960 survey showed adults had an average of 18 missing, filled or decayed teeth.)

   Total the repair costs and decayed teeth for the class.

2. Have students keep a four-day record of food intake with amount and time of eating. (The food diary from Activity 3, Chapter 2A, may be used for this activity.)
3. Have students carefully list all foods sweetened with sugar in the four days. Determine total number of exposures of the teeth to sweets, when sweets are eaten (at meals or between meals) and the form (solid or liquid). (Between meal sweets and solid, sticky foods are particularly damaging to teeth.)
4. Firm foods with high water content (called "detersive" foods) help remove bits of food sticking to teeth. Have students determine whether detersive food was eaten with each meal.
5. DISCUSS: What foods could you delete from your diet which are plaque-forming? What foods would you substitute? Write a list of changes you intend to make in your diet.
6. After a few days, discuss: have students begun to change diets to improve dental health? Why or why not? What factors have impeded the changes? How can students deal with these?

Activity Eight

Dental Health and the Community

OBJECTIVE: To determine the community's role in promoting good diet for dental health.

BACKGROUND INFORMATION: Nizel, Abraham: "Sugar and Tooth Decay," FFPNFP; "Nutrition and Dental Health," (available from Information Office, National Institute of Dental Research, National Institutes of Health, Bethesda, Maryland 20014, DHEW Publ. No. (NIH) 74-647); Masters, Donald H., DDS, with Lewis, Howard L.: "The Sour Side of Sugar," (available from Journal of the American Society for Preventive Dentistry, P. O. Box 555, Carmel Valley, CA 93924); Mayer, Jean: A Diet for Living (1975) (available from Consumers Union, Book Dept., Orangeburg, N.Y. 10962, $4.00 + $.50 postage).

RESOURCES: Local dentists, representatives of American Dental Association, American Society of Preventive Dentistry.

PROCEDURE:

1. Set up the following committees:

   * school dental health
   * public policy and dental health
   * community and dental health
   * exhibit committee

2. School Dental Health Committee:

   Investigate and list:

   * What sweetened foods and plaque-forming foods are available to students over a five-day period? At what times are they available in the cafeteria, vending machines and home economics class?

   * What detersive (raw fruits and vegetables) foods are available at school over the period? At what times are they available?

   * Does the school safeguard dental health? Prepare a brief report.

3. Public Policy Committee:

   A. Have students contact the dental societies (American Dental Association and American Society for Preventive Dentistry--local chapters). Find out:

   * approximate cost of dental caries in the community
   * are there enough dentists in the community?
   * what preventive dentistry efforts are being conducted?
   * is the water flouridated?what is the fluoride content of local water?(one part per million is ideal.)

   B. Conduct a poll to determine community support for a state or county tax on soda pop, soft drink syrups and powders, and possibly sugar. (West Virginia has had a tax on soda pop since 1951. The revenue is earmarked for the State School of Medicine, Nursing and Dentistry. It generates between $4.5 million to $5.5 million annually.)

   * Present the results of the poll to county or state legislators for consideration and action.

   * Prepare a report on dental care and preventive dentistry in the community.

4. Community Committee:

   Have the committee research:

   * How much sugar, soft drinks and candy are sold in food stores?

   * How many places (parks, clinics, recreation areas, gas stations, public buildings, friends' houses, home) offer sweets?

   * Prepare a brief report: How widely are sweets available? What quantities are consumed? How could this be altered?

5. Exhibit Committee:

   *Have the group plan a dental health exhibit, perhaps for dental health week.
   *Plan a debate between dentists and soft drink distributors or candy distributors on the value of these products.
   *Plan a presentation of findings to the PTA. Involve representatives of each committee, the dental societies and other interested people.

Activity Nine

Cooking for Good Health

OBJECTIVE: To plan and cook a model meal which is wholesome, nutritious, and contributes to good health.

BACKGROUND INFORMATION: The American Heart Association Cookbook; other disease-prevention cookbooks available in stores and from health associations.

PROCEDURE:

1. Divide the class into ten groups. Assign each group a diet-related disease from the list on page one of this chapter. Assign one group a diet for optimal general health, designed to prevent disease.
2. Have each group plan a day's diet (breakfast, lunch, dinner) appropriate for prevention and/or treatment of its assigned disease. Encourage students to be imaginative and create interesting, tasty menus.
3. Have an "optimal health," disease-preventive pot luck meal. Assign each group a course to prepare from its planned meals--main course, vegetable, salad, dessert, beverage, etc. Groups should prepare enough so that each class member may have a taste.
4. At the pot luck meal, have each group briefly describe their dish and its specific disease-preventing features. Ask interested students to assemble a menu with the brief explanations. Reproduce and distribute to students as a take-home fact sheet.
5. Have students try out a new meal or dish at home consistent with disease prevention. Report back to the class the food used, how it was prepared, and family's acceptance. Identify factors that made the new dish succeed or fail.

Activity Ten

What Doctors Say On Diet and Health

OBJECTIVE: To determine if doctors in the community advise their patients on health promoting diets. To identify the diets that doctors recommend.

MATERIALS: Copy of Diet-Related Disease Chart, p. 60.

PROCEDURE:

1. Have students compose a list of general practitioners, internists, and clinics in the community.
2. Divide the list so that each pair of students receives an equal number of names.
3. Have pairs of students survey the doctors and representatives of clinics. (Survey may be conducted in person, by mail, or by phone.)

SURVEY QUESTIONS:

- * Do you think diet is an important component of health?
- * What major diet-related problems do you witness in your practice?
- * What dietary changes do you consider most important in the American diet?
- * Do you think diet is an important factor in reducing the risk of degenerative disease?
- * Which diseases that you treat could be alleviated or prevented with dietary changes?
- * What nutrition information do you provide patients to reduce the risk of degenerative disease?
- * What other health promoting (dietary) measures do you suggest?
- * Which patients do you advise?
- * What foods or types of foods do you recommend or discourage?
- * What other preventive projects would you like to do, but don't have time for?

4. Have students compile the results of the survey. Do doctors in your community provide nutrition information to patients to reduce the risk of degenerative disease? Why or why not? What dietary changes do they consider most important? What information do they most frequently provide? What nutrition information do they most frequently neglect? (Use Diet-related Disease handout for this question.) Do doctors teach all of their patients about how good nutrition can prevent diseases? If not, which patients do they advise? For example, do they provide information about heart disease to patients in a particular age group (e.g., middle-aged men), patients in a high-risk category (e.g., patients with high cholesterol), or patients who already have the disease (e.g., patients who have had heart attacks)?
5. Have interested students write a report on the nutrition and health promoting dietary information provided by local doctors. Suggest that they write a press release based on the survey and their report and send it to radio and TV stations and newspapers.
6. Invite a panel of nutritionists, doctors, and other local people concerned with health care to discuss the report, and the need for dietary counseling in health care.

Part C: Through the Lifecycle

Although the basic nutritional needs of most people are similar, the precise amounts of nutrients needed vary with age, sex and activity. Aside from varying physiological needs, people of different ages have varying control over what they eat. Psychological aspects of different ages greatly affect food choice and nutrition.

Eating habits that are adequate during one stage of life may not provide for special needs at another period of the life cycle. Unless people are aware of and able to meet the special needs of infancy, childhood, the teen years, adulthood, pregnancy and lactation, and old age, their health may suffer. Community and federal support programs, designed to educate and to supplement available food for target age or population groups can also help eliminate unnecessary malnutrition and ill health.

Pregnancy

The outcome of pregnancy is affected by the mother's diet prior to as well as during pregnancy. This in turn affects her child's health and future. Reserves of certain nutrients, such as iron, established before pregnancy may be even more important than the diet during pregnancy. Women must maintain an excellent diet and good health to avoid the complications of pregnancy and to meet the nutritional requirements of the developing infant. The developing baby increases requirements for calories, protein, vitamins and minerals.

A good diet improves the chances for a safe delivery, free of complications, and decreases the chances of a premature delivery or underweight baby. The mother's ability to nurse her baby successfully is enhanced by good diet.

DAILY FOOD GUIDE: Eat a well-balanced diet of natural foods. Avoid: foods high in sugar, saturated fat, and potentially harmful food additives. Food additives, especially artificial colorings and artificial flavorings, may cross the placenta wall, as may drugs, and have an adverse effect on the growing fetus. Avoid salty foods and over-use of table salt if your family has a history of high blood pressure or a retention of unusual amounts of fluids. Avoid medication--even aspirin--without good reason, and always consult a physician before taking a drug.

NUTRIENT SUPPLEMENTS: Most nutrients will be supplied by a well-balanced diet; however, iron stores of women are seldom enough to meet the iron requirements of pregnancy. Most physicians prescribe an iron supplement (30-60 mg/day) during the last six months of pregnancy. Many physicians also recommend a folic acid supplement to prevent anemia and perhaps other complications.

WEIGHT GAIN: Despite strong evidence to the contrary, some doctors continue to advise patients to limit their weight gain. Adequate weight gain is essential for proper development of the baby. An average gain of 25 pounds (range 20-30 pounds) is recommended. Some authorities recommend up to 35 pounds as desirable. The amount of food needed depends upon activity, body size, age, and weight at the time of pregnancy. Overweight women should not try to lose weight during pregnancy.

COPING WITH DISCOMFORTS OF NAUSEA, VOMITING AND INDIGESTION:

* Morning sickness: eat small meals every two hours. Avoid drinking fluids with meals. Return to normal diet as soon as food is retained.
* Avoid foods which are upsetting, irritating or difficult to digest.
* Indigestion or "heartburn": Attempt to determine the cause by eliminating foods from the diet one at a time to determine if they are the offenders. Some women find that high fat intake increases the problem.

(Heartburn during pregnancy is caused by the normal loss of muscle tone in the gastrointestinal tract. This causes the sphincter muscles from esophagus to stomach to relax more easily.)

- * Constipation: Drink 8 or more glasses of liquid a day (include milk, water, soups and juices in your tabulation.) Eat foods high in bulk such as legumes, whole grain bread and cereals (especially bran), vegetables and salads, and fresh and dried fruits. Do not use laxatives unless prescribed by your physician.

ADOLESCENT PREGNANCY: Pregnancy during this time often presents both physical and psychological risks. Adolescents require more nutrients and calories than at any other time to meet their own growth and development demands. Pregnancy places additional nutrient demands on the body. Adolescent girls desiring fashionable, slim figures often reduce their intake of particularly essential nutrients, such as iron, calcium, vitamin A and ascorbic acid by eating too little. In addition, their diets often consist of many empty calorie foods. A carefully chosen diet is extremely important to protect the health of the pregnant adolescent and her baby. These women should eat a balanced diet of natural foods from the four food groups, with additional servings if needed, to permit the proper weight gain.

Infant Feeding

During pregnancy, plans for feeding the baby should be made. Recent investigations suggest common infant feeding patterns in this country warrant re-evaluation. Two important areas of concern are breast feeding vs. bottle feeding, and weaning foods (both processed and homemade).

HUMAN MILK: Most authorities agree that breast feeding provides the baby with optimal nutrition, greater resistance to disease, and important psychological benefits.

- * The nutritional quality and anti-infective properties of human milk cannot be reproduced in cow's milk formulas.
- * Breast feeding minimizes the likelihood of allergy due to exposure to foreign milk proteins. Cow's milk allergy is the most common allergy of infancy.
- * The amount of breast milk consumed is controlled by the baby. As a result, the baby is not likely to be overfed by a parent encouraging him/her to finish the bottle.
- * The concentration of human milk is controlled by nature; because most commercial formulas must be diluted with water, bottle-fed infants sometimes receive overconcentrated formula, resulting from either a mixing error or because an overanxious parent figures "a little more" is better. On the other hand, formula may not be concentrated enough if parents overdilute the formula by accident or to make it last longer.
- * Human milk is cheaper than formula. Additional nutrients needed by the nursing mother can be supplied by extra amounts of everyday foods.
- * Close mother-baby contact following birth is important for "bonding." Breast feeding facilitates development of an intimate relationship.
- * Breast feeding allows the mother to lose stores of fat accumulated during pregnancy; thus, her weight is apt to return to normal more quickly than if she does not nurse the infant.

Breast feeding for a few weeks is better than not breast feeding at all. Working mothers may express milk by hand and save it for feeding when away from the infant, or use an infant formula during the day.

Nursing mothers should avoid oral contraceptives. Medications of any kind may pass into the milk and harm the baby.

FORMULAS: If the mother decides not to breast feed, the physician will recommend a formula for the baby. It is extremely important to follow the directions exactly. Too concentrated a formula places a heavy load on the kidney, and the extra calories may result in infantile obesity. An overdiluted formula may impair a baby's growth. Skim milk is not recommended before one year of age. Parents who make formula based on evaporated milk and syrup should also give their baby vitamin drops.

NUTRIENT SUPPLEMENTS: Most authorities believe that breast milk contains all the essential nutrients for the first four to six months of life, except for vitamin D and possibly iron. Vitamin D should be given by two to three weeks of age, and iron supplements after three months. Some doctors recommend a supplement of vitamin C for breast-fed babies at several weeks of age. Parents should give only the recommended amount; little is known about vitamin dependency or the results of mineral or vitamin overload. Excessive amounts of certain fat soluble vitamins such as vitamin A and D may be toxic.

SOLID FOOD: Opinions differ on the proper time to introduce solid foods. Pediatric authorities agree that solid food is not needed during the first three months of life. Many authorities feel that there is no nutritional or physiological need to introduce solid foods until 4 to 6 months of age.

Jars or cans of processed baby food are convenient but more expensive than home-prepared foods and equivalent adult foods, especially since they are packaged in such small amounts. Some have sugar and salt added which may be undesirable, or even harmful to infants, and certainly not beneficial in any way. Gerber's Vanilla Custard Pudding derives 44% of its calories from added sugar; Plums with Tapioca, 27%. The added sugar in baby food may stimulate our innate preference for sweet foods, and continued consumption of sugar increases risks of dental caries and obesity. Some processed baby foods also contain modified starch, another empty-calorie ingredient that replaces a substantial portion of the nutritious ingredients in the jar. The modified starch lengthens shelf life of combination foods, benefitting manufacturers only, not babies.

Home preparation of baby food is a better way of knowing the nutritive contents, and insuring that an infant is not consuming unnecessary and non-beneficial ingredients such as sugar, salt and modified starch. Vegetables and fruit should be cooked without salt, then mashed, blended or strained. A moderate amount may be prepared, stored in ice cube trays in the freezer, and used as needed. Keep foods covered during storage to protect them from contamination. Always keep cooking area scrupulously clean; sterilized commercial baby foods are preferable to home-prepared foods cooked in a dirty kitchen.

Children

By about one year of age, children are usually eating table food with the family. Encouraging good eating patterns during this time is important. Parents should serve wholesome foods, such as milk, cheese, yogurt, raw and cooked vegetables, fruit, whole grain bread and cereal, fish, eggs, nuts, legumes and meat to encourage appreciation of whole, natural foods.

If good food is attractively presented in a pleasant atmosphere, the food will probably be eaten. To discourage a taste for sugar (sweets), salt, and fried foods, keep such foods out of the home and shun fast food restaurants. Parents' preferences and habits established at home are the strongest influence on children's eating patterns. The roots of many degenerative diseases of adulthood may be laid down in childhood when we learn to choose the very foods that are detrimental to our health.

The food industry, through advertising, is one of the biggest promoters of poor eating habits in children. Consider the number and type of commercials aimed at young children which glamorize poor eating habits. It is estimated that by the time a child is sixteen, he or she has spent more time in front of a television set than in school. The effects of TV advertising on children and on parents is remarkable. The following table (Ward, S. and Wackman, D. B., Harvard University, 1971) shows the percentage of mothers usually yielding to their child's choice of food products:

For 5 - 7 year old children	% of mothers usually yielding
Breakfast cereal	88
Snack foods	52
Candy	40
Soft drinks	38

Parents should choose food in the best interests of their children and not yield to the pressures of the food industry. Supermarkets are designed for the child consumer; the much-advertised sweet and crisp fried foods are frequently placed at children's eye level

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and packaged to attract them. Parents should ask managers to change store design in the interests of public health. Shop without children if the pressures to buy are too strong.

Many of today's children believe food originates in the supermarket, vending machines and local drive-in restaurants. Children should be given an opportunity to see good food come from the earth. Planting a small garden, a mini-garden, or herbs in planters, window boxes, or bushel baskets, may awaken in children a new awareness of nature. Field trips to the country or to "u-pick" farms for fruit are delightful educational experiences for urban children. Sprouting seeds and making salads or sandwiches with the sprouts is fun and educational. Letting children assist with the selection of recipes, shopping, and preparation of food builds positive attitudes and promotes an enjoyment of food.

Children love celebrations. Families may want to have their calendar of celebrations, such as birthdays, holidays, important family events, memory day--special days when the family takes time to share and care about good eating and good living.

Teenagers

Adolescents are particularly vulnerable to poor nutrition. At no other time during the life cycle, with the exception of pregnancy, are the amounts of nutrients needed greater. Both growth and development demands and the emotional stress of this sometimes turbulent period increase nutritional needs, especially for calcium, protein, iron, vitamin C, vitamin A and a number of other nutrients. Some of the major factors that contribute to poor food choices among adolescents are:

* the desire to break away from childhood eating habits and establish their own identities;
* the model, movie star or super athlete image promoted by Madison Avenue advertising;
* a lifestyle of eating on the run and snacking, instead of sharing family meals;
* the aggressive merchandising of nutritionally dubious foods by the media, shops, supermarkets, drive-in restaurants, and sometimes even schools.

Teenagers are consuming soft drinks, crisp fried foods, pastries and cake in increasingly alarming amounts, while milk, fruit and vegetable consumption has decreased. Teenagers eat an estimated 140-150 pounds of sugar per year, considerably more than the national average.

Poor eating habits may result in deficiencies. The semi-starvation diets followed by some teenage girls deplete nutrient stores. Several studies have found low intakes of vitamins A and C, iron and calcium in teenage diets. Authorities suspect deficiencies of trace minerals, such as zinc and chromium.

Parents, teachers, school administrators, and classmates can help teenagers obtain balanced diets by providing wholesome, nutritious and tasty foods and snacks in place of the sugar and fat-laden foods so often chosen by teenagers. At home, even if meals are eaten on the run, parents and teens can prepare casseroles and protein foods, and have a fruit bowl and raw vegetables within reach. A variety of cheeses, whole grain breads, granola, jars of nuts and seeds, etc. make fine snacks and party treats.

A Special Note for Teenagers and Adults

Americans are using more and more drugs--both medicinal and "social." While disease can be controlled and body functions regulated by drugs, physicians are learning that certain medications may produce nutritional deficiencies. Prescribed drugs can decrease absorption, increase excretion, or restrict utilization of specific nutrients.

Amphetamines, which are used to depress the appetite to produce weight loss, may interfere with the absorption of some nutrients. Initial weight loss is related to decreased food intake, but as tolerance to the drugs develops, appetite increases and weight loss only continues if caloric restriction is imposed. Nutritional considerations aside, this group of drugs may produce serious adverse effects on circulatory and nervous systems.

Evidence indicates that some women taking oral contraceptions may have increased

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nutrient requirements for folic acid, and possibly vitamins B-6, B-12, C, and zinc. Women on the "pill," especially those who plan to bear children, should be careful to consume additional amounts of foods containing these nutrients. Drugs given prior to or during pregnancy can arrest or impair fetal growth; pregnant women should seek professional guidance before taking any drugs.

People on long-term and multiple drug regimens are the most often afflicted by drug-induced deficiency states. Short-term drug therapy is generally not a cause for concern. Drug-associated nutritional deficiencies usually have several causes. The drug increases requirements for a nutrient or interferes with nutrient utilization; the diet is insufficient for the needs of the individual; previous or present disease, such as chronic infection or alcoholism, also may interfere with utilization of nutrients.

People using any drugs should consult their physician or see a nutritionist about nutritional side effects.

Adults and Middle Age

America has its own peculiar form of malnutrition, a diet too high in calories, fat, and refined sugar and starch. The tendency to consume too many calories is obviously encouraged by the relatively sedentary lifestyle that urbanization and automation have made possible, and by the aggressive marketing of foods that are high in calories and low in nutrients, such as soda pop, candy, alcoholic beverages, and snack foods.

Adult Americans are suffering incalculable pain, paying enormous medical costs, or dying prematurely because of illnesses such as diabetes, heart disease and bowel cancer. These illnesses are occurring on an epidemic scale in Western nations and are caused, at least in part, by diet and other controllable factors. Most people assume that these serious illnesses are a natural and inescapable part of life, yet they are virtually unknown in some cultures. In short, these may be considered "unnecessary diseases." (Particular diseases are discussed in more detail in Chapter 3-B, "Diet-Related Diseases.")

The unnecessary diseases develop slowly and quietly--not like measles or chicken pox--and reflect the gradual disintegration of bodily organs and processes. They may begin in childhood, but not be manifest until middle or old age. Good eating patterns are important throughout life, but for the middle aged they may mean the difference between life and death. Many adults have difficulty changing lifetime eating habits. Yet change is often crucial to continuing health.

The Panel on Nutrition and Health of the Senate Select Committee on Nutrition and Human Needs stated in a 1974 report that "a few simple changes in the American diet and habits of life could greatly reduce the number of people who acquire diet-related diseases and may die from them." In its report, the Panel strongly recommended that Americans switch to a diet low in calories, saturated fat, sugar, cholesterol and salt:

> The "alternate diet" is designed to prevent disease and, at the same time, is nutritionally adequate. Because it is largely but not completely derived from legumes (pod vegetables: beans, peas, peanuts, etc.), grains, vegetable and fruit products, it is less expensive to produce in terms of resources than the present American diet based much more on food products derived from animals. It has this additional feature of ecological soundness at a time of world food shortages.

Some recent studies show that heart disease can be reversed by a restricted fat diet and a program of controlled exercise. Middle aged Americans should heed this advice. Physical exercise and a carefully controlled diet can add many active years to life.

Senior Citizens

In recent years malnutrition in the aged has attracted considerable concern. Certain dietary deficiencies may even stimulate aging, such as impaired vision from vitamin A deficiency; thyroid goiter from inadequate iodine in the diet; loss of teeth from vitamin or mineral deficiencies; and anemia from inadequate iron or other nutrients needed for blood formation.

Many of the elderly suffer from osteoporosis, a gradual softening of the bones. Osteoporosis may lead to deformities of the spinal column, causing forward stooping and painful pressure on the nerves. Bone fractures occur more easily as a result also. Inadequate protein and calcium intake, lack of physical exercise, inadequate production of sex hormones, and possibly excessive phosphorus intake, contribute to osteoporosis. Prevention of bone disease should begin early in life. A diet adequate but not excessive in good quality protein and calcium, and a sustained program of physical exercise contribute to healthy bones.

Aging may be accompanied by disorders which affect nutrient absorption or food intake. Some drugs interfere with utilization of certain nutrients. Mineral oil, frequently used as a laxative, reduces the absorption of fat-soluble vitamins. Diminished sense of taste (possibly due to zinc deficiency), and loss of teeth may result in a disinterest in eating. People who work with the elderly must consider these factors for nutrition counseling.

Accessibility to grocery shopping, adequate storage of food preparation facilities, sufficient money for food, and a pleasant eating environment are often out of reach for senior citizens.

The community should understand and assist the elderly in maintaining a healthy diet:

* Since lack of interest in eating is common, especially if eating alone, communities should encourage senior citizen clubs and activities which bring people together to share meals in pleasant surroundings. Some schools encourage senior citizens in the neighborhood to come for lunch.
* With the high cost of living, many senior citizens have little money left for food. To help them, federally-assisted programs, such as food stamps, meals on wheels (when ill or convalescing), or a neighborhood lunch program, are available. Old people may reap the benefits from taxes they paid when employed.
* When housing for senior citizens is constructed, adequate food preparation space and convenience shopping services should be included.

Activity One

Pregnancy and Nutrition

OBJECTIVE: To identify special nutrition needs during pregnancy.

BACKGROUND INFORMATION: Goodwin, Mary T.: Better Living Through Better Eating (available from Montgomery County Health Department, Rockville, Maryland 20852); Nutrition: During Pregnancy and Lactation (available from Maternal and Child Health Unit, Family Service Section, California Department of Health, Sacramento, California); House and Garden Bulletin #72, Nutritive Value of Foods, (available from U.S. Superintendent of Documents, Washington, D.C. 20402, 35¢).

RESOURCES: Obstetricians; nutritionists; Parent and Child, Inc. representatives; National Foundation--March of Dimes.

PROCEDURE:

1. Assign readings on diet during pregnancy. Discuss and produce a summary sheet of essential points.
2. Divide class into groups of four to six. Pass out Pregnancy and Nutrition Worksheets. Ask each group to make recommendations for each of the situations on the worksheet. Allow time for class discussion of each situation.
3. PREGNANCY AND NUTRITION WORKSHEET

   Imagine that you are the staff of a community health clinic. Every week a meeting is held for pregnant women who have questions or concerns about nutrition. Each of the women attending is concerned with providing proper nutrition for herself and her developing child. How would you advise each person?

   For each situation record:

   * whether diet is adequate or inadequate
   * excesses or deficiencies that may result from the diet; other dietary problems
   * possible effects of lifestyle on diet
   * changes you would recommend

   The situations:

   * Maria has recently decided to become a vegetarian. She has decided to exclude not only meat but all animal products, including dairy products such as milk, cheese, eggs and yogurt from her diet. She is eating a wide variety of whole grains, fresh fruits and vegetables and carefully planning meals to obtain adequate amounts of protein by combining complementary plant foods.

   * Susan began to drink beer and wine at parties when she reached drinking age. She didn't like them at first but all her friends drank alcohol, so she persisted and soon acquired a taste for it. Later she tried an occasional mixed drink at parties. Soon she found that she enjoyed having a drink after work each day and sometimes before bed. Most of her friends drink about the same amount, so it seems normal to Susan.

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- Carol used to be overweight, but managed to lose a lot of weight a few years ago. She's proud of her slender figure and would like to stay slim. She intends to continue her active life with friends during her pregnancy, and in order to keep her weight down, she intends to eat less than usual.
- Anna loves to eat--but mostly between meals. She just can't get enough potato chips, pretzels and sweets. Frequently she'll drink a few bottles of soda pop a day. She's often so full from these snacks, that she'll skip one or more regular meals. But she figures as long as she stays close to her proper weight (she's just a few pounds over...) she must be eating all right!
- Wendy started worrying about her diet a few years ago. She didn't feel very well and decided she wasn't getting enough vitamins. She now takes several vitamin supplements daily and has begun taking protein supplements as well. She figures that since her baby's development will probably demand some of her nutrients, she should double the amount of vitamin tablets and protein supplements she now takes.
- Ruth is 17. She enjoys sports and partying and being active. She always seems to be doing something, and pregnancy hasn't slowed her down at all. She picks up food whenever she has time, often at a fast-food restaurant, but has been known to skip a meal when she's on the run. She's too busy to think much about about food, and besides she doesn't want to gain too much weight during pregnancy.
- Sara has been very concerned about her diet for several years. She is careful to eat a balanced and varied diet of natural foods. Each day she eats a variety of fruits and vegetables, dairy products, whole grains, and protein foods.

4. For a stimulating follow-up to the activity, stage a role play based on the situation and characters above. Ask for volunteers to play each woman described. Ask for three or four volunteers to play nutrition counselors. Have the students role play the meeting, based on class discussion and recommendations for each character.

Activity Two

The Best Way To Feed the Baby

OBJECTIVE: To understand the importance of good infant feeding practices. To examine information available on infant feeding. To determine changes in infant feeding practices over the years.

BACKGROUND INFORMATION: Goodwin, Mary T.: Better Living Through Better Eating; White Paper on Infant Feeding (available from Center for Science in the Public Interest, 1755 S Street, N.W., Washington, D.C. 20009, $1); Hausman, Patricia: "Feeding Baby Best," FFPNFP.

RESOURCES: Health department or community pediatrician, nutritionist, La Leche League representative, Parent and Child Inc. representative.

MATERIALS: Infant feeding literature from U.S. Department of Health, Education and Welfare, local health departments, community pediatricians, hospitals, clinics, and formula and baby food manufacturers.

PROCEDURE:

1. Have students explore infant feeding in some of the following ways:

   A. Gather magazines for new mothers available from pediatricians' offices, hospitals, diaper services, etc. Have students analyze advertisements for reliability and truthfulness of information. Does the information encourage dependence on manufactured products rather than self-reliance? Does the literature avoid mentioning all options--such as breast feeding and homemade baby food? Is the information in the best interests of parent and child? Make a collage with the ads, highlighting contemporary approaches to infant feeding. Write to the publisher of any literature that has shortcomings, detailing your objections.

   B. Have students fill in the following questionnaire:

      (1) How were you fed as a baby? Naturally (breast)? __________
      Artificially (bottle)? __________

      (2) When did you start solid food? ____

      (3) Was the solid food commercial? ______________ Homemade? __________

      (4) Where did your mother get information on infant feeding? Did her doctor encourage breast feeding? Homemade baby foods? Early introduction of solid food?

      ** Include a baby picture with your questionnaire.
      ** Ask the same questions of parents and grandparents. Record their responses and include baby pictures if available.

      DISCUSS: What changes have occurred in infant feeding in your family? What factors do you think account for these changes? Do you feel these changes? Do you feel these changes were for the better? Why or why not?

   C. Obtain materials about breast vs. formula feeding from hospitals, clinics and parent-child type associations. Assemble in packets and have students evaluate: Does the material encourage and assist mothers in breast feeding? Does it encourage formula feeding? Have students follow up by interviewing representatives of the institutions or groups: How many people are they reaching? Do they give out a free formula package? Why? Do formula companies give the hospitals or clinics free gift packs? Other gifts (notepads, letter openers)? Fellowships, cash grants? Write a report and issue a press release on the findings.

   D. Have students prepare homemade baby food. (Avoid use of salt, sugar or other seasonings. Babies' taste buds are not well-developed, although sweetening can be detected. Blend, mash, or strain wholesome natural foods, such as banana, carrot, egg yolk and beans. Moisten with milk, juice, vegetable cooking water, or plain water.) Discuss advantages and disadvantages. Consider time, nutrition, variety, appeal, texture, taste, cleanliness, and cost.

Activity Three

Food Adventures for the Young

OBJECTIVE: To examine factors that influence the development of eating patterns in children; to help children discover different foods.

BACKGROUND INFORMATION: Goodwin, Mary T. and Pollen, Gerry: Creative Food Experiences for Children (available from Center for Science in the Public Interest, 1755 S Street, N.W., Washington, D.C. 20009, $4.50 ea.)

RESOURCES: Day care and kindergarten teachers, early childhood experts, nutritionists, or nutrition students from your local university.

PROCEDURE:

1. Have students list their earliest recollections of food. What foods did they eat? With whom did they eat? Who and what influenced what they ate? Have students list their favorite foods as children and list 10 favorite foods today. Are they the same or different? Why?
2. Divide the class into groups of 6 or 8. Have each group discuss what were the most powerful influences on their food habits, and what they believe influence young children today. (Encourage students to explore this further when baby sitting, in child development class, by visiting a day care center, surveying the supermarket to see what is at eye level of the small child, or watching TV during prime time for children.) Have groups list the most powerful influences shaping children's eating habits today. Are these forces supporting or undermining health?
3. Have each group plan and present tasting parties to children in day care or child development classes. Students should plan how to introduce new foods, such as different vegetables, fruits, whole grains, nuts, etc., to small children. Simple nutrition concepts should be introduced. Create an awareness of size, shape, color, texture, origin, preparation, imaginative serving ideas, maybe stories, singing, dancing related to the event. Many day care centers welcome such help. Encourage interested students to continue to conduct regular nutrition-party lessons with local children.
4. Have each group create a list of nutritious snacks for young children. Prepare a leaflet of healthy snacks with descriptions or instructions. Distribute the leaflet to day care centers and parents. Ask the parents' group or PTA to publish it in their newsletter.

Activity Four

Coping With Different Lifestyles

OBJECTIVE: To determine methods of obtaining a well-balanced, low-cost diet in different situations.

MATERIALS: "Survival Diet" sheet.

PROCEDURE:

1. Divide class into four groups.
2. Have groups create a survival diet at the lowest possible cost to meet needs, in one of the following situations:
    * You are a student with very little money, living with three other students.
    * You are finished with school and unemployed, living in a rooming house without a kitchen.
    * You are traveling around the country and have no kitchen facilities.
    * You are backpacking and camping.
3. SURVIVAL DIET

Consider:

HOW SELF-RELIANT ARE YOU?

* Grow your own food--in a community garden, small private plot, mini-garden in large containers, or kitchen sprout and herb garden.
* Collect wild edible foods. (If you live in a rural area, ask some old folks about safe, wild foods. In the city, the Park Service naturalists can help you to identify them.)
* Prepare inexpensive foods from scratch. Try making bread, yogurt, soup, bean sprouts and other nutritious foods. (Homemade are usually cheaper, better tasting and more nutritious than store-bought varieties.)

HOW IMAGINATIVE ARE YOU?

* Try a variety of protein food combinations.
* Use every edible part of various foods in soups, casseroles, egg foo yung, etc.
* Some great "street foods" or "on the move foods" that don't need cooking: nuts, seeds, wheat germ, granola cereals, whole wheat bread, yogurt, cheese, peanut butter, raw vegetables (like carrots, cucumber, cauliflower, spinach, tomatoes), fruit, hard-boiled eggs, canned fish (tuna, mackeral, sardines), canned beans.

HOW RESOURCEFUL ARE YOU?

* Living with a group may be cheaper than living alone.
* Find stores that will give you overripe fruits and food past the shelf date but still safe.
* Orchards may allow you to pick fruit at a very low rate--especially fallen fruit.

Ungraded, irregular fruit and vegetables may be available from farmers at very low cost.

- What food resources are available? Emergency food centers at churches; food stamps; W.I.C.; soup kitchens; others.

4. Have the groups discuss how they feel about the situation they have chosen.
   - How would you like to be in the lifestyle you chose to investigate?
   - How long do you feel you would survive in it?
   - Would you take the effort to try and eat as good a diet as possible? Protecting your health by eating well is a good investment in yourself. Consider: if you were sick, where would you go?
   - How well is your community equipped to take care of people in these lifestyles?
5. Plan a class presentation based on the situations chosen by groups.
   - A. Present the situation. Use costumes, artifacts, display boards, food, etc. Create a colorful or drab scene to suit the occasion.
   - B. Show charts with the cost of food in the situation. Try to obtain a well-balanced diet. What foods are missing and why?
6. Have class assemble a resource list for survival foods, and where to obtain them in your community. Comment on the ease or difficulty in getting resources. Identify friends of the needy.
7. Encourage students to prepare low cost, highly nutritious foods for these various lifestyles in home economics class.

Activity Five

Nutrition Needs of the Elderly

OBJECTIVE: To determine food needs of the elderly in the community. To investigate food programs available to the elderly.

BACKGROUND INFORMATION: American Families: Trends and Pressures, 1973--Hearings before Subcommittee on Children and Youth of Committee on Labor and Public Welfare, U.S. Senate, Washington, D.C. 20510; Carmody, Deirdre: "The Elderly Have Special Nutritional Needs," FFPNFP; Consumer Reports: Eating Right for Less (available from Book Dept., Consumers Union, Orangeburg, N.Y. 10962, $1.75 + $.25 postage).

RESOURCES: Local Commission on Aging.

PROCEDURE:

1. Have the students write their impressions of older persons: How many old people live in their community? Who are they? What do they do all day? How many are poor? How much do they spend on food? What do they eat? Where do they eat? How do they feel about growing old? Invite a resource person from the local commission on aging to discuss these impressions and the facts. Do nutrition programs for the elderly exist in your community? How many? What services do they supply?

2. Invite persons from some of the following situations to meet with the class. Provide transportation if necessary.

   a. family member living at home
   b. living in a boarding house or motel or hotel
   c. living independently in an apartment
   d. living in a house in a neighborhood, in a city, in the suburbs, and in rural areas
   e. living in a retirement community
   f. eating in a Title VII congregated feeding program, preferably at a school
   g. active participant at a senior citizen center
   h. recipient of Meals on Wheels program
   i. nursing home patients

   Be sure they are able to cope and will not be embarrassed. There are many senior citizens who would love this opportunity. Through a local senior citizen or community center identify those who have food related information and skills to share with the students. Have a senior citizens' panel at school discuss the significance of food to them for cultural, economic, social and health reasons. Are these needs met in the community? The panel discussion should be informal. The following outline may be a guide in gathering information.

   Suggested Interview

   - Name
   - Approximate age
   - Occupation(s)
   - Tell about some of the worthwhile (to you) things you have accomplished in your lifetime.
   - What gives you most pleasure in life now?
   - Where were you born?
   - What foods did you eat as a child? Were these foods ethnic or regional foods?
   - What were your favorite foods as a teenager?
   - Did you gather, shop for, or prepare and serve food as a teenager? Tell how this was accomplished. Encourage use of photographs, cooking utensils, dishes, unique items from the times to enrich the presentation.
   - What foods do you eat today and why? What foods do you avoid? Are you satisfied with your diet? Do you eat alone a lot?
   - Do you participate in any local or federal feeding programs? Why or why not?
   - How do you like the supermarket? Would you prefer mom and pop stores? Why or why not?
   - What wisdom would you like to pass on to students today?

3. Prepare a snack for participants taking into consideration common nutrition problems of the elderly.

4. The Nutrition Program for the Elderly, Title VII of the Older Americans Act (P. L. 92-128) requires that nutrition education be included with group meals. Have interested students investigate whether nutrition education exists at group meal sites. Have students develop a nutrition lesson for a Title VII meal. Encourage them to volunteer to work with local nutritionists on nutrition education for the elderly.

4.

FOOD AND THE CONSUMER

Food and the Consumer

An understanding of the nutrition, politics and economics of today's food system is essential if consumers are to make wise food purchases. Yet armed with the knowledge and determination necessary to eat properly, it is often difficult to provide ourselves with good food. Food stores and public places (museums, hospitals, ballparks) rarely provide food on the basis of good nutrition, true consumer choice and reasonable prices.

Consumers have some basic food rights:

* INFORMATION: In order to choose wisely, consumers need to know about ingredients, freshness and cost.

* FOOD SAFETY: Consumers themselves could never adequately monitor food safety. Responsible government agencies and industry must protect consumers from foodborne diseases, incidental additives, and intentional additives.

* CHOICE: Despite the large numbers of products present in supermarkets, there is often no real choice. The consumer may pick between dozens of breakfast cereals, many of them essentially the same with different sizes or shapes, or artificial flavorings; yet, whole grain products or food with no additives may not be available. The food stands at many public places and recreational facilities often sell only junk food--highly processed foods with high fat, sugar and refined carbohydrate content.

* FAIR PRICES: Processed, name-brand foods add millions of dollars to the consumer's food bill each year.

* ACCESS TO ALTERNATIVES: Gardening, co-operatives and farmers' markets, and self-sufficient food preparation skills should be promoted and supported by government.

Consumer rights will become consumer realities if more people acquire the knowledge, motivation and skills necessary to shape government policy and persuade the food industry to meet human needs.

The Right to Information

WHAT IS IN THE FOOD WE EAT?

The conscientious shopper often cannot determine the ingredients in foods. Food labeling regulations are a step forward in this area, but full and accurate information regarding food contents is still generally unavailable.

The Food Drug and Cosmetic Act of 1938 provides for disclosure of net weight of contents and ingredient listing in descending order of weight for most foods. The percentage of each ingredient is not required.

As many people have no idea that ingredients are listed in descending order, this is inadequate ingredient information. To educate consumers, a few food stores have printed the following message on their house-brand products: "INGREDIENTS: (LISTED IN DESCENDING ORDER)" Even with this message, descending order provides at best a rough estimate of the actual ingredients. Both Corn Flakes and Sugar Frosted Flakes contain sugar as the second ingredient, but Sugar Frosted Flakes is about 30% sugar by weight, while Corn Flakes contains only about 7% sugar by weight. Descending order does not permit consumers to compare these products. Consumer groups have advocated percentage listings of ingredients (by weight) in order for shoppers to know the quantity of each ingredient present.

Many foods, including white and whole wheat bread, ice cream and sherbet, jam and jelly, salad dressing and mayonnaise, and soft drinks, may have labels listing none or only a few of the ingredients and additives the food contains. "Standards of Identity," set by FDA and USDA, regulate ingredients allowed in these foods. These standards do not identify exactly what is in the food, but what is permissible or expected in the food. Ingredients need not be listed on packages of the 27 foods for which standards exist. Currently Congress is considering legislation to require complete ingredient disclosure for all foods. The exact content of the food product is critical to people on special diets and important to all consumers. Without a full list of ingredients, a consumer cannot know whether the absence of a list of additives, for example, signifies that no additives are present, or that the food is covered by a standard and contains a large number of additives. To eliminate such confusion, all food labels should bear percentage-ingredient labeling.

The FDA adopted nutrition labeling regulations and guidelines in 1974. The labeling is mandatory if micronutrients (vitamins and minerals needed in relatively small quantities by the body) have been added ("fortified foods") or if the manufacturer makes any nutritional claim for the product. In most cases nutritional labeling is optional. The U.S. Recommended Daily Allowances (R. D. A.) are the amounts of protein, vitamins, and minerals people need each day to stay healthy. Set at levels above minimum body needs, they provide a considerable margin of safety.

Nutrition labeling can be misleading when foods are heavily fortified. RDAs have been established for only 19 of the 45 or so essential nutrients. Only eight of these 19 are required by nutrition labeling regulations--the rest are optional. Some food companies, particularly manufacturers of breakfast cereals and snack foods, are heavily fortifying their products with some or all of these eight nutrients. Foods are fortified to replace some nutrients destroyed by processing or to make poor foods look good. But substantial amounts of other important nutrients are not likely present in these highly processed foods. Nutrition labeling may imply that only those nutrients permitted to be mentioned on a food label are required for a complete or well-balanced diet. Consumers must resist the impulse to judge a food by the quantities of a few nutrients it contains; the whole food must be judged. Highly processed foods and foods with high fat or sugar content should be avoided regardless of fortification.

Nutrition labeling can provide valuable information to the consumer but incomplete information may mislead them in selecting foods. Important nutrition information--sugar and saturated fat content--is absent from labels. A balanced diet of wholesome, unadulterated food is a more assured way of attaining good nutrition than eating a diet of highly processed foods with certain nutrients added.

As advertising greatly influences food purchases, the right to know what is in food applies to ads as well. Advertisements for all manufactured or processed foods should include a full list of ingredients. Consumers should have more information when facing tempting and slick magazine ads than "UnmmGood." A list of ingredients, and percentage of ingredients by weight would provide useful information to consumers contemplating food purchases; this information would also encourage competition on the basis of quality.

THE COST OF FOOD

Do you envy the shopper who must calculate the better buy: a 5-1/8 ounce package of scalloped potatoes, a 5-1/4 ounce package of mashed potatoes, a 7-1/4 ounce package of hash browns, or a 15-3/4 ounce "family size" package of mashed potatoes? Or who must choose between three sizes of tuna: 6-1/2 oz., 9-1/4 oz., 12-1/2 oz. (sizes which appear to be--but aren't--multiples)? Or would you rather compare one manufacturer's cereal with 22 other sizes available? The numbers are dizzying on paper, and in a supermarket filled with more than ten thousand foods, the calculations are more confusing. In a 1968 study conducted by Consumers Union, shoppers were instructed to pick everyday food items that offered the most for their money. Over 50% of their choices were wrong. Shoppers are obviously having a difficult time in the supermarket jungle.

To improve this situation many cities and states have instituted unit pricing laws. The price of any product is expressed as price per

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standard measure. The cost is given per pound, ounce or quart for items sold by weights and measure.

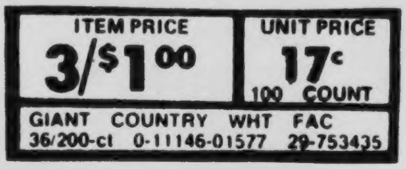
0 54000 85300

Unit pricing regulations, or voluntary systems instituted by supermarkets, are valuable to consumers trying to determine the best possible buys. These systems require clear, legible, easily understood labels, and responsible monitoring. Unless unit price labels are accurate and visible, they are useless to consumers. Many cities with such laws lack funds for enforcement, and compliance depends on the store's cooperation. Moreover, where no unit pricing ordinances are in effect, consumers struggle with a proliferation of non-standard packages, virtually impossible to compare in price.

The size and shape of food packages often confuse our attempts to know the true cost of food. The most common packaging illusion is the excessively large package (with a message such as "This package is sold by weight, not by volume. Some settling of contents may have occurred during shipping and handling" intended to justify its meager contents!) Frequently these packages turn out to be only one-half or two-thirds full, a shortage not excused by the notice on the package.

Another packaging illusion is frozen foods that appear very much the same in the freezer compartment, even though they range from 8 to 11 ounces in weight. The faces of the packages are nearly the same size, they merely differ in thickness. Even with unit-pricing, shoppers may make many purchasing decisions based on size. The widespread use of misleading packaging insures that many of these decisions will be poor ones.

You have probably noticed symbols like the one shown here on many food products. Universal Product Code (UPC) System is a computerized system for tabulating food bills. When items pass through an electronic scanner at the checkout, the price will automatically record. The system is speedy, fewer errors are made in ring-ups (unless the computer goes haywire, or has been programmed improperly) and detailed sales receipts (with the product name next to the amount) can be provided.


ITEM PRICE
3/$1.00
UNIT PRICE
17¢
100 COUNT
GIANT COUNTRY WHT FAC
36/200-ct 0-11146-01577 29-753435

Sound good? It may also mean that individual prices will be taken off food items, if supermarkets have their way. Price tags aren't necessary with this system and supermarkets want to save money by eliminating them altogether. Supermarkets want to provide only shelf prices, but the supermarket industry is notorious for failing to maintain accurate shelf prices. With no prices on the items themselves, comparison shopping is difficult. Checking the price of corn--fresh, frozen or canned--will require either a superb memory or trips from aisle to aisle to compare prices since prices of items in the cart will not be marked. With no prices marked on the products they use at home, consumers will be less sensitive to price rises from week to week.

The supermarkets claim that their savings will be passed on to consumers in lower prices, but shoppers have no guarantee that this will happen. Stores might merely gobble up savings in bigger profits. Consumer groups are concerned that the shoppers' right to know the price of food will be subverted by this system. The Consumer Federation of America has proposed that city and state legislatures pass a law stating: "The package of every consumer commodity offered for retail sale shall bear the price of such commodity in arabic numbers. The price shall be large enough to be readable and shall not be in code." Legislatures throughout the country are acting on this. California, Connecticut, Massachusetts and Rhode Island have passed laws requiring item-pricing. At least seven other states are currently acting on laws; cities and counties throughout the country are enacting local statutes.

FOOD FRESHNESS

In the past food dating took the form of a code, undecipherable by most consumers, provided solely for use of the retailer.

Consumers have the right to know about freshness. Therefore many states and cities have required, and some grocery chains have voluntarily instituted, "Open Dating" systems. Clear legible dates are printed on all products where age is important. (Many consumers consider this information necessary for all food products.) The most common system for open dating is the "Pull Date," the last date that the product should be sold. With proper care, food products will stay fresh for about a week after the pull date. Check with your food store about the timing of its pull dates. Printing the pull date on goods is helpful, but a message such as "Sell by..." and publicity explaining the system will insure full consumer understanding and use of the open dating system. As all consumers still will not scrutinize their food for the dates, stores should conscientiously remove old products from shelves.

NUTRITION INFORMATION

When most Americans think of food, their minds are probably long on jingles and juicy pictures, and short on nutrition information. The supermarket is a logical place to acquire nutrition information. The food industry has long ago abandoned its role as a provider of basic foods. It has become a service industry, bragging that it offers "maid service" to the nation in the form of processed foods and prepared meals. A more appropriate service for people-minded food stores would be providing honest nutrition information to shoppers. A store stocking close to 10,000 food items does a disservice to its customers by not also providing information for sorting through these food items for the most healthful food buys.

Some grocery chains have occasionally sponsored newspaper ads or prepared information fliers concerning nutrition. Giant Foods has run ads on protein alternatives to meat, a "Terrific Ten" list of foods (based on low price and nutritional merit) and ways to reduce sugar consumption. Consumers Co-op of Maryland and Virginia, a twelve-store chain, regularly distributes a flier entitled "Consumer Alert" which has disclosed excessive sugar content of breakfast cereals, the inadequacy and expense of hotdogs and luncheon meats as a protein source, and has suggested nutritional and economical breakfast alternatives and non-meat protein alternatives. The Berkeley (California) co-operative supermarkets produce an excellent regular series of nutrition and consumer information, printed on three-ringed sheets for convenient binding. Consumers seek out and habitually read such information when shopping.

Some grocery stores employ a home economist or nutritionist to answer consumers questions, in person or on a bulletin board. Many shoppers have nutrition questions, but few will be able to research them after leaving the store. Educators know the importance of the "learnable moment" for really effective education, and shopping time can be just that. Where a nutritionist is not available, many consumers desire a "free speech" bulletin board where nutrition notices can be posted. Consumers can share their knowledge regarding healthful food purchases.

Activity One

Nutrition Labeling

OBJECTIVE: To assess a food's nutritional value. To evaluate the usefulness of nutrition labels.

BACKGROUND INFORMATION: Jacobson, Michael, Nutrition Scoreboard; Goldbeck, Nikki and David: The Supermarket Handbook, pp. 307-314; "Nutrition Labels: A Great Leap Forward," FDA Consumer, September 1973; House and Garden Bulletin #72.

PROCEDURE:

1. Have each student choose a food product which comes in choice of brands and varieties (canned fruit, frozen vegetable, hot breakfast cereal, vegetable juice, etc.).
2. Have students study ingredient and nutrition labels of their foods. Have them identify the nutritional assets and disadvantages of the food.
3. Have students survey all brands and varieties offered to determine the best nutritional buy. Have students justify why or why not they believe there are nutritional differences between brands and varieties.
4. DISCUSS: Is the nutrition information on the label adequate? What other information would be helpful in making the choice? How would your choice change if you considered price, taste, and other factors in the purchase? What do you think is the relative importance of these factors?
5. Each student should choose a closely related food that might be substituted for the original product. (A student who chose tuna may choose salmon; a student who chose orange juice may use orange drink.) Compare the nutritional adequacy of the two products, and choose the best nutritional buy. DISCUSS: Is adequate information available to do this? Why or why not? Do both products have nutrition labels? If not, why not? Use House and Garden #72 and Composition of Foods to compare the two foods if nutrition labels are absent.

Activity Two

What's in the Food?

OBJECTIVE: To assess the utility of descending order ingredient listing.

MATERIALS: "Sugar Content of Fabricated Foods".

PROCEDURE:

1. Have students survey breakfast cereals and compose three separate lists: Cereals with sugar as their first ingredient; cereals with sugar as their second ingredient; cereals with sugar as their third ingredient.

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2. Using "Sugar Content of Fabricated Foods," have students bar graph per cent sugar content of each list on a separate page.

3. SUGAR CONTENT OF FABRICATED FOODS--BREAKFAST CEREALS

Product	Sugar as % of total weight:
General Foods:	
Post Alpha Bits	40
Post Oat Flakes	20
Post Toasties	7
Super Sugar Crisp	43
Cocoa Pebbles	44
Fruity Pebbles	44
General Mills:	
Mr. Wonderfull's Surprize	29
Wheaties	11
Sir Grapefellow	40
Cheerios	4
Total	11
Kellogg's:	
Cocoa Krispies	38
Sugar Frosted Flakes	29
Special K	9
Corn Flakes	7
Kellogg's (cont.)	
Product 19	12
Froot Loops	35
Rice Krispies	7
Raisin Bran	6
Concentrate	11
Pop-Tart	26
Quaker:	
100% Natural	19
Captain Crunch	37
King Vitamin	50
Life	14
Ralston-Purina:	
Wheat Chex	6
Rice Chex	5
Corn Chex	14
Super Sugar Corn Chex	27

--Source: Dr. Michael F. Jacobson,
Center for Science in the Public Interest

4. DISCUSS: What information did you get from the ingredient listing itself? What information did you get from the bar graphs? Were you surprised at the percent of sugar contained in the cereals?

Activity Three

A Food is a Food is a Food...Or is It?

OBJECTIVE: To compare the ingredients in prepared food to those in traditional recipes.

BACKGROUND INFORMATION: Burros, Marian, "The Real Cost of Convenience Foods," FFPNFP; Donnelly, Tom: "The New Way of Cooking," FFPNFP.

PROCEDURE:

1. Have each student choose a prepared food or food mix in the supermarket (TV dinner, cake or cake mix, pudding or pudding mix, canned or dried soup, bread, salad dressing, gravy mix, "fancy" frozen vegetables, etc.). Find one or more recipes in cookbooks for homemade versions of the food.
2. Compare ingredients. Record differences between store and home varieties of the food.
3. DISCUSS: What are major ingredient differences? Can you identify nutritional differences? From your own experience, do home and store varieties differ in taste, texture, freshness?

4. USDA Home Economist Betty Peterkin wrote in USDA's Family Economic Review, "If the home-prepared food has been counted on to provide a specific need for the day. . . the convenience item replacing it should also meet this need. . . ." DISCUSS: Do you think this is true of the food you studied?

Activity Four

Best Food Buy

OBJECTIVE: To determine which food product is the most economical buy.

PROCEDURE:

1. Choose a store (or stores) which provide unit pricing.
2. Have students count off in 3's. Form trios--one #1, one #2, and one #3.
3. Choose a product with many brands and sizes for all groups to study, or allow each trio to choose its own product.
4. Have all #1's use posted unit prices to choose the most economical buy. Have them record all prices and make a bar graph of them. Have #2's ignore posted unit prices and calculate themselves the unit price of each item, and the best buy. Have them record all unit prices, and make a bar graph. Have #3's choose the best buy without using posted unit prices or their own calculations. They should choose by scanning prices and package sizes, and roughly estimating the most economical buy.
5. Have students turn in their bar graphs and choice for most economical purchase. Calculate the percent of correct answers in groups #1, #2, and #3.
6. DISCUSS: What accounts for varying accuracy in the three groups? How do you think most people decide on the most economical buy? How long did it take students from each group to complete the assignment? Do you think unit prices are important? Were unit prices accurately maintained in your store?

Activity Five

Deceptive Packaging

OBJECTIVE: To identify the price deceptions and confusions resulting from food packaging practices.

MATERIALS: Deceptive food packages.

PROCEDURE:

1. Collect packages illustrating packaging deception (products which come in many non-standard sizes; packages appearing larger than they are--frozen vegetables with a large face and narrow sides, for example); packages with a great deal of settled contents; packages with excessive internal padding (some cookies and

candies); packages containing mini-packages--cups, envelopes, cans, boxes of ingredients--which take up a lot of space, etc.).

2. Students should identify the packaging tricks. Use these packages to launch and dramatize the issue of packaging and price.
3. Have students identify five cases of deceptive packaging at the grocery store. Make a bulletin board display.
4. Have students write complaints, describing specific deceptions; mail copies to FDA, Congressional Representatives, city's director of consumer affairs.

The Right to Food Safety

Much of our food is shipped from faraway points; much of it is highly processed and preserved, and combined into food products completely unknown twenty or thirty years ago (with long-range hazards from carcinogens more likely than immediate dangers from bits of glass or rodent hairs). Consumers themselves could never adequately monitor food safety. Food safety is an essential right which must be safeguarded by responsible government agencies and the industry itself. Halfway measures are unacceptable; food safety is a matter of life or death.

Three major areas of food regulation come to mind:

* FOODBORNE DISEASE: Production, processing, transport and storage of foods must safeguard against the existence of pathological micro-organisms that cause foodborne diseases such as botulism, salmonella and illness caused by mold.

* INCIDENTAL ADDITIVES: The amounts of potentially toxic metals such as mercury, lead, cadmium, and many industrial chemicals such as polychlorinated biphenyls (PCBs) must be carefully monitored and kept to safe levels. Increasing use of pesticides requires careful testing to determine if toxic residues remain in food products. Residues are most commonly found in liver and kidney; some environmentalists do not eat them.

* INTENTIONAL ADDITIVES: Many chemicals are added to foods in order to enhance or improve the taste, texture, appearance and shelf life, or as a substitute for more expensive ingredients. The safety and need for these chemicals should be carefully assessed.

The safety of food additives requires scrutiny. Since 1955 the number of chemicals used as additives has doubled. Each American eats approximately five pounds of additives per year. Five categories of foods--carbonated beverages, confectionary, processed meat, frozen desserts and baked goods --account for one-fourth of the money spent on food and one-half of the additives used.

What are the types of food additives and how are they used?

* ARTIFICIAL FLAVORS AND ENHANCERS, such as MSG, and artificial flavors that imitate real strawberries, coconut, or chocolate are cheaper than natural flavors and add needed pizazz to foods left bland and tasteless by processing. Manufacturers thus reduce the use of natural ingredients and substitute less expensive synthetic chemical substances.

* ANTI-OXIDANTS control discoloration of foods (such as fruits) caused by oxidation. They protect oil-containing foods from rancid-

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ity. Large quantities of perishable foods can be shipped long distances reducing shipping costs. Foods have a longer shelf life, and seemingly longer freshness, although vitamin loss may still occur. Several anti-oxidants are BHA, BHT, and propyl gallate.

* ANTI-MICROBIAL PRESERVATIVES inhibit the growth of mold, bacteria and yeast which spoil food. Examples are sorbic acid and sodium benzoate.

* EMULSIFIERS permit the dispersion of tiny particles or globules of one liquid or another. For example, under ordinary circumstances oil and water will not mix. If, however, an emulsifier is added they will mix and remain an emulsion. Examples are mono- and di-glycerides.

* STABILIZERS AND THICKENERS are used to achieve the smooth, uniform textures and flavors of many foods. Close comparison of different brands indicates that they are often used to mask inferior ingredients and poor manufacturing techniques. Ice cream and yogurt production are two examples of the willingness of some manufacturers to follow a traditional, quality recipe where additives are unnecessary. Some brands have long lists of additives; others require none. Examples are methyl cellulose and carageenan.

* FOOD COLORS restore the natural colors to many processed foods or create a pleasant color for manufactured food products. They have proven to be the most hazardous type of additive. Colorings are also often used deceptively. Many consumers do not know that some Florida oranges are dyed to camouflage their natural splotches; sodium nitrite and sodium erythorbate maintain a fresh pink color in cured meat that would otherwise be gray; red potatoes and sweet potatoes are frequently dyed red; and "wheat bread" often contains caramel coloring to simulate the color of whole wheat bread.

The Manufacturing Chemists Association defends all approved additives, stating that such substances provide "plentiful, nutritious, safe and wholesome, convenient, varied and good tasting and economical" food to the American public. "Americans expect it. Food Science provides it." Less biased observers without vested interests believe the rule on the safety of food additives is that there is no general rule. Some are safe, others are hazardous. Some are safe at low concentrations, but toxic at high concentrations. Some are themselves safe but make possible the fabrication of unwholesome foods. Each chemical must be examined individually.

The major law regulating food additives was passed in 1958. The weakest part of the 1958 food additives law pertains to those chemicals that were already in use when the law passed. Such additives were accepted as being safe solely on the basis of their use for a number of years. Scientific evidence of safety was not required. These chemicals have been termed "generally recognized as safe" (GRAS). A position on the GRAS list does not guarantee safety, though, because many GRAS chemicals have been inadequately tested. Cyclamate was on the list until 1969 when it was deemed carcinogenic; brominated vegetable oil (BVO) was on the list until 1970 when it was suspected of being toxic and subjected to further testing. The FDA is re-examining the toxicity of all GRAS compounds and testing many of them. The policy of "innocent until proven guilty" may be appropriate for people, but not additives. One unsafe additive could harm thousands of people.

Most people recognize the importance of many additives to our food supply. Critics question the possible overuse of additives to mask inferior foods, and the adequacy of FDA's tests and efforts to restrict harmful ones. Are we using additives prudently as one means, along with many others, to provide an adequate and appealing food supply to our nation? Or are additives used excessively, resulting in inferior, unwholesome and sometimes unsafe foods?

In Congressional Hearings for a bill restricting food additive use, Senator Gaylord Nelson stated:

> This brings us to the crux of the situation: economics. The profits of the food industry are being placed above the public health as regards the safety, nutrition and necessity of food additives. Synthetic and convenience foods mean high profits and greater market control for the food industry. Additives mean that foods can be manufactured at low cost, shipped long distances, and remain on shelves longer.

A related problem, discussed in THE RIGHT TO INFORMATION, is the labeling of food additives. Often additives aren't listed on labels or are designated as "artificial flavorings," "artificial color," "emulsifier," etc. rather than by name. Additives often mislead consumers, especially colorings which are cosmetic only, and the consumer sometimes has no way of detecting their presence. Complete ingredient labeling would aid the consumer in choosing safe, high-quality foods, but as Senator Nelson states:

> Improving the quality of our food products, however, will not occur through labeling. The problem of safer foods must begin at the production level, not on the supermarket shelves. If the food industry controls the market, it controls what we eat. Consumers will buy what's on the shelves. The product must be safe from harmful chemicals and nutritious when it reaches the market.

Activity Six

Who is to Blame?

OBJECTIVE: To explore personal values related to responsibility, risk and food safety.

BACKGROUND INFORMATION: Jacobson, Michael: Eaters Digest.

MATERIALS: Copies of "Who's To Blame?" for each student.

PROCEDURE:

1. Have the class read the following story. (The story is hypothetical, designed to dramatically highlight some of the issues regarding food safety.)
2. WHO'S TO BLAME?:

   John Q. Public has been arrested for allegedly breaking into the Deerg Co. Warehouse, during the middle of the night and removing and destroying $1 million worth of Deerg's inventory of baby food.

   Previously, Public had been involved in a lengthy dispute with the Deerg Company and the FDA (Food and Drug Administration), the Federal agency charged with monitoring the safety of foods. In some of its products Deerg uses a food additive called ABC which causes severe allergic reactions in some people, especially infants. ABC's only function is to color desserts red.

   Public's daughter Mary is allergic to ABC and had a near-fatal reaction after eating a Deerg product. Public has asked that Deerg discontinue its use of ABC; Deerg has refused since ABC is allowed by law and the firm believes it sells more baby food because it is eye-appealing to parents. Public requested that Deerg list ABC on its label. Deerg refused, since it is not legally required and would be costly to print new labels.

Public took his case to the FDA. They denied his request to ban ABC, citing insufficient evidence of its dangers. They also rejected his petition to have ABC listed on labels of all foods in which it is used.

Public approached the president of a large grocery chain and requested that the chain discontinue stocking Deerg's products. The president said there was considerable customer demand for the product and the store couldn't stop stocking it.

Public called the local newspaper editor to ask her to publicize this important issue. If people knew about the problem they could avoid products with ABC and organize for change. Because Deerg advertises heavily in the paper, the editor refused to print the story.

Public became desperate. He thought of Mary's suffering as well as the danger other babies would face as long as Deerg used ABC. He says he feels he had no recourse but to destroy some of the baby food and hope that the damage done to Deerg and the resulting publicity and public pressure would lead to the elimination of ABC.

3. Have students rate the characters mentioned in the story according to whom they believe is the most and least to blame.
4. Have class discuss rankings. DISCUSS: Why did you rank characters as most or least to blame? Which of your ratings differed most from other class groups? Why? Do you consider any of the characters completely right or wrong? What implications does this have for government or industrial policy concerning food additives?

Activity Seven

Best Food Buys: Additives

OBJECTIVE: To compare additives found in various products of the same type. To form criteria to assess the necessity of additives. To determine which food product is the wisest buy.

BACKGROUND INFORMATION: Jacobson, Michael: Eaters Digest.

PROCEDURE:

1. Have each student choose a processed or manufactured food. Have them check labels on all brands and varieties of this product to determine presence of food additives. Note which additives are present, and research their history, function and safety.
2. If some brands and varieties contain many more additives than others, carefully observe other ingredients listed. Are natural ingredients being replaced by chemical additives in some products?
3. Based on a comparison of additives and research into the chemicals' safety and function, each student should determine the best buy from a food safety standpoint. What criteria were used in making this choice?
4. Have students check the Standards of Identity for their foods, where applicable. (EATERS DIGEST, pp. 205-223) DISCUSS: Do standards allow additives to be used but not listed with other ingredients? Are all the additives actually contained

in your product listed?

5. In early 1976 Congress was considering legislation that would require full ingredient labeling. What has become of this legislation?

The Right to Choice

Large supermarkets carry 10,000 or more items. So, why worry about choice when a wide variety of items is so clearly available? The answer is that too often our supermarkets are filled with multitudes of not so-different items, masquerading as real choices under the guise of artificial colorings, flavorings, shapes or textures. The glitter of over 75 varieties of cold cereal, 30 or 40 TV dinners, and 60 to 70 cake and brownie mixes may distract us from observing serious gaps in food products available.

Are whole grain breads available? Many shoppers find 15 or 20 varieties of white bread in their grocery stores and not one loaf of whole wheat bread. Stores often market "wheat bread," whose main ingredient is enriched white flour, with caramel coloring and brown-tinted wrappings sometimes used to give the impression of a whole wheat loaf. Are whole wheat flour and brown rice offered? These products are sometimes available, but grains. Whole grains are more nutritious than refined, enriched products. Can shoppers buy unsalted nuts and seeds, preferred as healthful snacks by many consumers? Can these items, as well as beans, grains, fruits and vegetables, be bought in bulk or only in small, over-priced quantities in wasteful packages?

Some shoppers prefer foods which contain no chemical additives, or varieties which use only the most necessary and safe additives. Some consumers find even adequately tested additives undesirable since they often substitute for higher quality natural ingredients. Few supermarkets make a special effort to provide these alternatives to consumers.

In many neighborhoods, customers prefer ethnic foods. Supermarkets don't always tailor their products to their locale; consumers are forced to choose from a variety of products having little appeal to them.

Food packaging can limit choice. Shoppers can't inspect packaged fruits and vegetables for ripeness, freshness and quality. Consumers who are concerned with waste of natural resources have difficulty finding returnable beverage containers, which conserve natural resources and save the consumer money. Packaging also serves as a point-of-purchase ad--enticing packages attract shoppers and influence their purchases.

Both the absence of desired products and the psychological limits of marketing tricks that strongly promote certain items while virtually ignoring other less profitable products limit food choice. The extensive mass advertising of many foods has this effect. Even aware consumers are greatly influenced by the tantalizing claims of major food advertisers. Many consumers develop blinders to grocery items other than popular, advertised brands.

Both food manufacturers and supermarkets use many marketing strategies which limit psychological choice. Stores advertise "SPECIALS" which may or may not really be special buys. Coupons, cents-off labels, free offers, and premium packs persuade shoppers to purchase selected items. These gimmicks largely promote expensive new products such as synthetic dessert toppings, breakfast beverages, new snack items or breakfast cereals, and encourage new users of previously marketed products. It may be worth taking advantage of these savings if the products are truly valuable, but a few pennies off on an already overpriced, extravagant item is not a bargain.

Food placement in the supermarket is carefully designed to influence purchases. Displays help sell selected food items--generally those with higher profit margins--for the store. Displays are often strategically placed to lead a shopper from one to another. They are designed to draw customers through "dead areas" of the store, or past impulse items such as non-foods, candy, or snacks. Other layout techniques aid sales. Grocers place promoted products at eye level, since this location sells more than waist or floor level. Children's cereals and cookies are frequently placed at a child's eye level. The peripheral aisles of the store are high traffic areas, so retailers locate their high-profit departments there. Within certain departments, product location can increase overall sales. An example is the produce department. When carefully spaced, certain "power items," such as lettuce, carrots and bananas, promote sales of other items. When clustered together, they limit the exposure of less-sought-after items such as lemons, eggplant, mushrooms or melons.

These and other techniques encourage shoppers to buy more, and especially more of higher profit items. More often than not the strategies promote expensive, new, gimmicky, "extra" foods--not the simple basics of hearty, low-cost nutrition. For shoppers accompanied by small children--who are most vulnerable to impulse buying of expensive sweets, snacks and other advertised foods--these merchandising tricks may vastly transform the content of the shopping basket, and ultimately, the family diet.

The right to choice in food extends to public places, such as schools, museums, hospitals, and sports stadiums where Americans do more and more of their eating. Vending machines, food stands and cafeterias often offer a poor selection of foods. Most vending machines contain only junk foods--candy, soft drinks, potato chips, cakes, gum. In 1974, 60% of vending sales were soda pop and coffee; an additional 20% were candy bars and other sweets. Refreshment stands in most entertainment and recreation areas are little better, adding such nutritional losers as hotdogs, ice cream sundaes, beer and Cracker Jacks to the menu. Fresh fruits, nuts, yogurt, whole grain snacks, fruit juice, or even milk may be unavailable. These inadequacies not only limit choice at the actual moment of purchase, but reinforce habits of selecting junk food when seeking a snack or quick meal. Many Americans also associate munching on a hotdog or box of Cracker Jacks with the pleasure of a ball game, or chewing a steady stream of oversized candy bars and ice cream with the movies.

Cafeterias in public places frequently depend on pre-cooked, highly processed dishes, loaded with synthetic chemicals. Fresh salads, sandwiches made with whole grain bread, fresh fruits and juices are not always available. These items should be basic choices offered to consumers in any cafeteria line.

Activity Eight

Advertising and Food Choice

OBJECTIVE: To characterize food advertising on children's TV. To assess the influence of advertising on food choice.

BACKGROUND INFORMATION: Choate, Robert B.: "The Sugar Coated Children's Hour," FFPNFP.

PROCEDURE:

1. Have students watch two hours of Saturday morning television. Record the number and length of commercials. Record the number and length of food commercials. What per cent of program time is commercials? What per cent of program time is food commercials? List the foods advertised, and the number of times each.

2. Have students characterize foods advertised. Are they snacks? desserts? breakfast foods? main dishes? fruits? vegetables? As a follow-up, have students check the ingredient listings of advertised products. How many have sugar listed as their first or second ingredient?

3. Assess the sales pitch used for each food product. What claims are made? Is a premium or membership a condition of purchase? Does a leading sports or news personality, entertainer, cartoon or storybook character praise the product in the commercial? Are children used as spokespersons or employed to deliver the sales message? Are vitamins advertised? Are empty calorie products, or products debased by excessive amounts of sugar, saturated fat and potentially harmful food additives advertised? Is a synthetic food deceptively advertised implying that it is comparable to or made from a natural food, such as an orange "flavored" drink advertised as orange juice? Are claims made directly or by implication that any edible product or nutrient by itself produces, hastens, or enhances vigor, stamina, strength, energy, growth or intellectual performance?

4. Watch one hour of prime time television. Repeat the observations listed above.

5. DISCUSS: How does food advertising differ between Saturday morning and prime time? What audience is reached? What types of foods do ads most frequently promote? What advertising techniques are used? Do you think children respond differently to advertising than adults? How?

Activity Nine

Merchandising Techniques and Choice

OBJECTIVE: To identify supermarket techniques promoting sale of selected food items.

BACKGROUND INFORMATION: Robbins, William: The American Food Scandal, "Ambush in the Aisles," pp. 135-145.

PROCEDURE:

1. INTRODUCTORY COMMENTS: Manufacturers' Promotional Tricks: advertising coupons, cents-off labels, free offers, premium packs, recipe books, colorful packaging or displays. Retailers' Promotional Tricks: "Specials," displays (and display placement to create traffic patterns), food placement in well-trafficked areas (such as peripheral aisles), arranging best-selling foods ("power foods") to expose other less-popular products for impulse buying; shelf placement of foods (eye level sells more than waist or ground level); and locating "impulse" items near the cash register).

2. Ask students to identify food promoted at their local supermarket either by retailers or manufacturers. Each student should find five products promoted by retailers and five products promoted by manufacturers.

3. SAMPLE WORKSHEET:

Product	Promotional Trick	Promoted by: Retailer	Promoted by: Manufacturer	Comment on Product	Good Buy?
Kellogg's 100% Natural	10¢-off coupon		x	expensive new cereal; many competitors*	expensive; lots of sugar; could make your own, more nutritious, better taste, cheaper. Decision: No

* Comments should characterize product: is it expensive or cheap, new or old, a staple food item or a food extra, a dessert, a snack food, a new-fangled food invention, a product with lots of competitors or a one-of-a-kind? Good Buy? should represent the student's personal decision as a consumer and the reasons for it.

4. Have students form small groups to discuss their results. Students who surveyed different supermarkets should compare: What specific brand promotions (manufacturers' promotions) appear in more than one store? Which kinds of foods are promoted by shelf placement or store placement? What are the characteristics of promoted foods? Which promotions help the consumer to make wise purchases? Which promotions hinder the consumer's ability to make wise purchases? What marketing tricks are most misleading? In general, do promotions help or hinder the consumer's right to food choice?

The Right to Fair Prices

All too frequently, excessive processing, packaging, advertising and gimmicky, costly marketing practices drive up food prices. Many consumers do not wish to pay for "built-in maid service"--PROCESSING, which diminishes the nutritional quality of foods; PACKAGING, which may misrepresent the quantity and quality of the food inside and costs valuable natural resources as well as consumer dollars; ADVERTISING, which unduly influences our food purchases, while we pick up the tab in higher costs; GIMMICKY MARKETING PRACTICES (coupons, cents-off, contests, specials and free offers), which not only affect our food choice but again cost consumers extra dollars.

Easy alternatives should be available. Store brands and bulk sales of staple foods which consumers can cook themselves allow them to forego the expense of processed foods.

Activity Ten

The Costs of Processing

OBJECTIVE: To compare prices of highly processed and less processed foods.

BACKGROUND INFORMATION: Burros, Marian: "Money Saving As An Art," and "The Real Cost of Convenience Foods," FFPNFP.

PROCEDURE:

1. Compare the prices of highly processed and less processed foods in the supermarket by some of the following methods:
   - A. Chart potato prices. Compare fresh potatoes, sliced canned potatoes, frozen french fries, frozen potato puffs, instant mashed potatoes, potato sticks, potato chips, tuna helper (potatoes and artificial mushroom flavor sauce), Crispi-Taters (potato snack), Hamburger Helper (sliced potatoes with a sour cream and beef-flavored sauce), instant potato soup mix, Munchies (potato crisp snack), Chipsters (potato snack), plus any other available potato items. Calculate price per pound and make a bar graph of results.
   - B. Calculate the price per pound of plain rice, and various rice "specials" such as Minute Rice, Rice-A-Roni, beef-flavored rice, spanish rice, rice and gravy, frozen rice specialties. (Most of these can be easily prepared at home using plain rice and a few pennies of your own home spices.)
   - C. Compare the price of fresh fruit, canned fruit, fruit juices, fruit drinks, and frozen fruit. If possible, have a taste test too! (Some products such as fruit drinks may contain little or no real fruit, consisting mostly of water and added sugar.)
   - D. Choose a TV dinner. Weigh portions of foods included in the product. Calculate the costs of these foods if purchased and cooked separately. (Price differences may be misleading since home-cooked foods usually contain higher quality ingredients.)
2. Discuss ways to avoid paying the high costs of food processing. What eating and cooking habits can consumers utilize to provide quick, convenient tasty meals without resorting to "convenience" foods at their inconvenient prices?

Community Action Activities

The issues highlighted in this chapter are highly visible in any community. The rights to knowledge, safety, choice, fair prices and alternatives are daily needs. Few consumers are able to exercise all of these rights in supermarkets or food concessions. The most effective way for students to discover consumer rights, how adequately they are provided, and why or why not they are fulfilled, is for the students themselves to monitor and attempt to influence satisfaction of these rights in their own community.

The following activities are designed to have the class act together as a task force in the community--investigating, monitoring, and helping to provide resources for consumers' full rights in food shopping. The activities sketched out for the task force are a full-scale yet manageable effort. Small group process, intergroup communication and cooperation, the accurate collection and processing of data and clear, honest publicizing of important issues, are skills which this effort will develop. Each activity constitutes a class project which will produce invaluable information for the community.

By INVESTIGATING the fulfillment of consumer rights, the attitudes and needs of consumers, the requirements of local laws and the responsiveness of local merchants, and COLLECTING DATA on specific issues, students deepen understandings of food-related consumer concerns and learn useful research skills.

By COMMUNICATING this information to others--citizens, government officials, the managers and owners of local food stores--students focus their knowledge and learn skills of analysis and expression necessary to present accurate and clear information.

By ORGANIZING FOR CHANGE on some of the issues they investigate, students learn the real mechanisms for decision-making in the community, the skills of organization, analysis and communication needed to effect change, and the relevance and utilization of knowledge.

If your class can't undertake the entire activity, coordinate appropriate segments with concept Activities One through Ten.

Activity Eleven

Food Store Task Force

OBJECTIVE: To accurately assess fulfillment of consumer rights in local food stores. To publicize both the fulfillment and neglect of these rights. To organize for satisfaction of consumer rights.

RESOURCES: Local consumer groups, Public Interest Research Groups (PIRG). (Write to Citizen Action Group, 133 C Street, S.E., Washington, D.C. 20003 for address of nearest PIRG.)

PROCEDURE:

1. After familiarizing themselves with consumers' rights, students should divide into four committees: Information, Choice, Fair Prices, Survey. (Information committee should be double-size.)

2. INVESTIGATION TIPS: Students should try to cover a cross-section of stores to enable valid comparisons and conclusions. Include national supermarket chains, local chains, co-operatives, convenience chains, mom and pop stores, and buying clubs.

   Students should compose a clear and precise sheet of questions for each investigation.

   Both direct questioning and "testing" (asking consumers to perform a task) are useful techniques for collecting information. For example, when investigating unit pricing, the survey committee could either ask consumers if they understand the unit pricing code, or give them several products and have them choose the best buy. Using both techniques provides more depth.

3. SUGGESTED ACTIONS:

INFORMATION COMMITTEE

Issue	Action
Unit Pricing	A. Find out if unit pricing is required by law in your community. What are its requirements and means of enforcement?
	B. If there are no laws, which stores have a voluntary system?
	C. Monitor stores to see if they maintain an accurate and up-to-date unit pricing system.

* SEE SUGGESTIONS FOR SURVEY COMMITTEE

Open Dating	D. Find out if there is a local law requiring open dating. What are its requirements and means of enforcement?
	E. If no laws exist, which stores have a voluntary system?
	F. Investigate whether items are removed from shelves when they reach the pull date.
	G. Are different dating systems used for different foods? Is this confusing? * SEE SUGGESTIONS FOR SURVEY COMMITTEE
UPC (Universal Product Code)	H. Do any stores in the area have a UPC system installed? Do prices remain on food items? Will the store continue to mark prices on items?
	I. Do any stores in the area plan to install UPC? Will prices remain on each food item?
	J. Has a city or state ordinance been passed or introduced requiring that every food product be individually priced?
Nutrition Information	K. Survey nutritional information provided by stores.
	L. Study store ads. Is nutrition a consideration?

CHOICE COMMITTEE

Food Additives	A. Are brands and varieties containing no additives widely available?
Whole Grains and Legumes	B. Do stores stock whole grain bread? brown rice? whole wheat flour? soy, rye and other flours? Is a wide variety of legumes available?
Packaged Produce	C. Is produce offered packaged or loose (allowing consumers to choose superior pieces and exact amount needed)?
Returnable Containers	D. Are a wide variety of soft drinks and other beverages available in returnable containers?
Supermarket Psychology	E. Investigate the nature and extent of promotions: displays, shelf placement and store placement, free offers, cents-off, etc.

PRICE COMMITTEE

Issue	Action
Price comparison of stores	A. Choose two stores of each type: national chain, local chain, convenience chain, co-op, mom and pop. Compare prices. Include store brands as well as brand-name goods. Compare stores in high- and low-income areas.

SURVEY COMMITTEE

The survey committee's primary concern is the attitudes, needs and problems of consumers. As other committees identify important issues, the survey committee should interview consumers.

Examples:

UNIT PRICING: How legible and understandable are unit pricing labels? What problems do consumers encounter with these labels? Given an example of labels, can consumers accurately choose the most economical buy? Do consumers support a city or state unit pricing ordinance?

OPEN DATING: How legible and understandable are printed dates on food products? Do consumers understand the code? Do consumers use open dating to decide on food purchases? Do consumers support a city or state open dating ordinance?

UPC: Do consumers want prices marked on each food item, rather than posted only on shelves? Would they be willing to pay a few more dollars per year for food (if necessary) in order to retain price markings on individual items?

NUTRITION INFORMATION: What kind of nutrition information would consumers find useful?

FOOD CHOICE: Do consumers feel they have adequate choice of foods? What food items or types of items would they like to purchase which aren't available?

SATISFACTION WITH THE FOOD STORE: Which specific features and services are consumers satisfied with? What are consumers dissatisfied about? Why do consumers shop at this food store rather than others?

MISLEADING PRACTICES: Do consumers purchase "wheat" bread believing it is whole wheat bread? How many eggs do consumers expect in a loaf of "egg" bread? In products with no ingredients listed (those covered by Standards of Identity), can consumers accurately name major ingredients? Can consumers choose the most economical buy from an array of one product's packaging sizes? Can they choose accurately on the basis of packaging appearance alone? By calculating the unit price? ("Testing" techniques will work better than interviews in this section.)

4. Each committee should focus on all three goals: investigation, communication and and organizing for change. The preceding section suggests investigation topics. The communication and organizing goals follow a common pattern for all four committees. As groups conduct investigations and obtain data, they should determine the communications and change efforts most appropriate on specific issues.

5. COMMUNICATION AND ORGANIZING FOR CHANGE:

   A. Prepare reports for consumers on quality of service offered by different food stores in the area. Write profiles of stores, rating them on fulfillment of consumer rights to knowledge, safe food, choice and low prices--"A Guide to Our Town's (or Neighborhood's) Food Stores." Be sure to include shopping alternatives such as farmers' markets, co-ops, buying clubs, etc.

   B. Contact the Food Editor of your local paper. Suggest that he or she cover more consumer, economic, and political issues related to food. Provide the paper with news articles and/or information about the results of your investigation. Write press releases concerning your findings.

   C. Prepare Public Service Announcements for radio and TV using information collected by your task force.

   D. Ask to present a guest editorial on a local TV station presenting your viewpoint on consumer rights and on your specific findings.

E. Contact City Council members, the mayor and other government policy makers with results which either call for legislation or better enforcement of existing ordinances. Determine their support for specific measures protecting consumer rights. Publicize these findings.

F. Some investigations will show that stores need to improve their services. Supply information regarding consumer needs and preferences, misleading practices, and inadequacy of services to store managers. Determine their viewpoint and follow-up actions on these recommendations. Publicize their response.

G. Work with local PIRG or consumer groups. Write a list of change goals in your community. Design and activate a strategy to reach these goals.

Activity Twelve

Public Places Task Force

OBJECTIVE: To assess fulfillment of consumer rights in public eating places. To publicize both the fulfillment and neglect of these rights. To act for adequate satisfaction of consumers' rights.

RESOURCES: Local Consumer Groups and PIRGs.

BACKGROUND INFORMATION: Vending Packet, CSPI.

PROCEDURE:

1. Divide class into three or four committees assigned to cover different parts of the neighborhood, town or city.

2. Each committee should generate a list of public places to survey for food choice, quality, price: museums, the zoo, hospitals, parks, movie theaters, schools, sports stadiums.

3. Establish criteria for evaluating food offerings. Example: CHOICE: Refreshment Stands and Vending Machines--should offer fresh fruit, nuts, yogurt, whole grain snacks, fruit juice and milk (alternatives to "junk foods"); Cafeterias--should offer foods listed above as well as fresh salads and sandwiches made with whole grain bread (alternatives to pre-packaged, highly processed, synthetic foods).

   Devise a simple check sheet for evaluating food choice in public places.

4. Compare prices for foods at various places. Determine criteria for "reasonable" prices. Should prices be about the same at all public eating places? If not, what factors justify lower or higher prices?

5. Interview proprietors and managers of food concessions in public places. What do they see as their responsibility? Is water provided for customers? Are frozen foods used?

6. Interview customers. Are they satisfied with the choice of food? Do they consider available foods nutritious? Should they be? Are prices reasonable?

7. Have class compare and compile data.

8. COMMUNICATING AND ORGANIZING FOR CHANGE:

   A. Choose public places where consumers' rights were most adequately fulfilled.

Choose places found most inadequate. Write an article for local newspapers describing the discrepancies between these places. Ask the food editor to include this information on food pages. Prepare a television guest editorial on the subject.

B. Compose a summary report of your investigation with information on specific places, and recommendations for improving the quality, choice and price of food available in public places. Publicize your report (through newspapers, radio talk shows, etc.); ask each place included in your survey to distribute free copies to consumers.

C. Determine who is responsible for food available in public places. How are concessions granted? Are there any laws designed to insure quality food in these concessions? Do local officials support legislation requiring at least half the food in public places to be wholesome, nutritious products? Publicize their responses.

D. As a summer school project, seek permission to run a food concession in a park or other public place. With the help of people experienced in running a food concession, plan and order food, set prices, etc. Run and manage the concession for a set period of time. Make it a model of good nutrition and low prices!

Activity Thirteen

Consumer Information Service

OBJECTIVE: To identify and research important consumer education issues; to communicate information simply and clearly.

RESOURCES: School Home Economist, Public Health Nutritionist, Cooperative Extension Agent.

PROCEDURE:

1. Introductory Remarks: The goal is to produce a consumer fact sheet to distribute in stores, libraries, etc. If sheets are available regularly and easily identified by a consistent layout, title and logo, consumers will read as an integral part of their shopping trip.
2. Divide class into two or three groups. Each group should take full charge of a fact sheet in rotation.
3. Have class decide on goals and policy matters such as:
   * how often to produce fact sheet
   * general layout and design
   * list of potential topics
   * list of resource people to help assure accuracy
4. Suggested topics: Sweetened breakfast cereals; alternative breakfast ideas for good nutrition; terrific foods in the supermarket; terrible foods in the supermarket; complementary protein--a healthy, economic, and ecological way to eat; food stamps; nutrition labels; what's there and what's missing; looking for good sources of ______ (food fiber, vitamin C, protein, etc.); open dating; unit pricing; nutritious snack foods; eating whole grains; low cost, high protein meals; packing a tasty, nutritious school lunch; consumer rights.

5. SOME TIPS FOR THE FACT SHEETS: Accurate information is essential. A good layout and printing job will enhance the image of a careful and thoroughly researched fact sheet. One topic per fact sheet will provide simplicity and clarity. Include a general introduction to the topic as well as concrete shopping, cooking and eating tips. Cite references for further reading if possible. Provide an address or phone number for feedback (relevance, accuracy, fullness of content, further questions, suggestions for future topics).
6. You may need a sponsor to defray printing costs: Contact County Health Department, Grocery Stores, Labor Unions, Churches, etc.
7. Have regular meetings to evaluate quality and effectiveness of the consumer information service.

The Right to Alternatives

Consumers are demanding a greater part in the decisions which shape the food supply. But a major stumbling block remains; as long as the food industry's priority is manufacturing and selling goods for profit, the goal of satisfying consumer rights remains, at best, secondary.

Many consumers, discouraged by the unresponsiveness of government and the food industry, have chosen a different path to fulfilling their needs and rights. They have taken personal charge, creating and working to maintain alternatives to the present food system. In the past few years a proliferation of alternatives serve many functions: providing direct access to low-priced, nutritious food; creating a sense of community; and demonstrating that consumers can, indeed, create and maintain options to the present food system.

FOOD RAISING: Persons of all ages throughout the country have taken a renewed interest in gardening. Springtime brings a flurry of activity. Creative urban gardeners are using every possible inch of space, growing roof and porch gardens, growing sprouts in the kitchen, and participating in community gardens. Many interesting and helpful books have been published with gardening hints. The word is out; gardening means "taking charge" of our own food supply, and it's an activity that almost anyone, anywhere, can do.

Gardening has a variety of benefits:

* It saves money. Gardeners can raise hundreds of dollars worth of their own food. As grocery prices continue to rise, gardening becomes more and more a practical way of supplementing the budget.

* It provides plenty of tasty, nutritious food. Anyone who has tasted homegrown vegetables can testify to their wonderful taste. Many gardeners utilize organic methods, providing themselves with pesticide-free food picked at the peak of ripeness.

* It conserves substantial amounts of natural resources. Gardening can save energy by foregoing petroleum fuels, chemical fertilizers and pesticides, extensive processing and transportation.

* It contributes ecologically and esthetically to the environment by providing green space amidst the concrete and carbon monoxide of towns and cities. Organic farming methods can help maintain or rejuvenate, rather than ravage, the soil.

* It provides healthful recreation.

Seattle, Washington, St. Louis, Mo., Syracuse, N.Y., and other cities throughout the nation have initiated broad gardening programs. Pennsylvania's "Anti-Inflation Gardening Program" helps new gardeners by providing educational materials, low-price seeds, and state-owned land for gardens. In 1974, the state helped more than 200,000 people to garden. For seventy years, Cleveland, Ohio, has run an extensive gardening program through its schools. In 1974, 21,000 students participated and raised about $622,000 worth of vegetables.

Gardening is an important learning activity, providing skill-training, biological and environmental science knowledge, and interpersonal cooperation. Unlike most school offerings, it prepares students for living better in the present rather than preparing for something to come. Members of the community are resources, contributing the know-how and elbow grease necessary to make home, school or community gardens a real success.

FOOD DISTRIBUTION: Consumers, tired of the high prices and declining quality of food products, are building alternatives to the supermarket. Many towns have formed or revitalized their farmers' markets. Fairgrounds, public squares, redeveloped land, stadiums, parking lots and closed-off streets provide selling space several days a week.

Markets provide reasonable profits for small farmers, as well as low prices and quality food for consumers. In many cities, the marketplace is also the location for handicraft and bakesales, art fairs, ethnic or traditional celebrations and other community events. In this relaxed atmosphere, farmers and consumers have an opportunity to share concerns and information.

Food co-ops and buying clubs are nonprofit structures in which consumers buy directly from wholesale dealers or farmers. Consumers save money normally paid to "middlemen." Buying clubs usually consist of several households who purchase bulk wholesale goods (fruits, vegetables, nuts, dairy) collectively. The clubs operate out of someone's home, church or a community center, with members contributing labor and transportation. Co-ops have more members, a greater variety of foods, and permanent quarters. There are some large supermarket-type co-ops, such as the Berkeley (California) and Hyde Park (Chicago) Co-ops. More frequently co-ops are small enterprises, emphasizing natural whole foods, sold in bulk, rather than conventional pre-packaged products. Stock may include fresh fruits and vegetables, grains, nuts and seeds, herbs, spices and teas, whole-grain baked goods and dairy products.

Consumers contribute a specified amount of labor (running a cash register, making bean sprouts, unpacking cartons) in return for the following benefits:

* Members save money normally paid to middlemen.

* Members have a voice in food selection and most other decisions.

* Good nutrition at low cost is the major, not secondary, goal. Extras such as nutrition and consumer information enhance rather than conflict with this goal.

* Co-ops not only provide food but service and social cohesion to the community.

FOOD PREPARATION: Consumers dissatisfied with the quality of food have created alternative cooking and eating schemes in order to include nutritious, whole foods in their busy lives. Many use whole grains, fresh fruits, and vegetables regularly in their cooking, almost eliminating highly processed foods from their diets.

By making their own bread, yogurt, granola, bean sprouts, baby food, etc., many individuals and families provide themselves important staples while gaining personal satisfaction. Preparing food needn't be a despised task to be accomplished in as short a time as possible; it can be recreation for families, friends and neighbors. Many Americans are trying to restore pride to their cooking and a relaxed, sharing spirit to the dinner table. One way of fitting good food and relaxed meals into busy schedules is the shared cooking groups formed by some families, friends and neighbors. Each night one member or family provides dinner for the group. Since each individual only cooks once or twice a week, he or she can contribute more time and care in preparation.

Cooking with whole grains, fruits, vegetables and other less-processed foods needn't be a time-consuming task. We can be efficient and self-sufficient at the same time:

* CAREFUL SHOPPING AND STORAGE OF FOOD: Determine your basics and keep them on hand at all times.

* CONVENIENT ARRANGEMENT OF INGREDIENTS AND COOKING TOOLS: Large glass jars are suitable (and attractive) for storing whole grains, nuts, seeds; a pegboard for hanging cookware and utensils provides convenience and frees storage space in cabinets.

* TIME-SAVING DEVICES: A pressure cooker, blender and vegetable chopper shorten cooking time considerably.

* ADVANCED PLANNING AND PREPARATION: Bulk preparation of your own convenience mixes quickens everything from pancake to coffee cake preparation; cooking two mealsworth at once, and storing half, or freezing cooked beans and rice saves time for the next meal.

It is not an either-or proposition. Consumers can have less-processed wholesome foods and the leisure time to enjoy them.

Activity Fourteen

Gardening

OBJECTIVE: To learn gardening skills. To learn environmental and food concepts related to gardens.

BACKGROUND INFORMATION: Rodale, Robert, ed., The Basic Book of Organic Gardening; Olkowski, Helga and William: The City People's Book of Raising Food; Staff of Organic Gardening and Farming: Teaching Organic Gardening; "Minigardens for Vegetables," House and Garden Bulletin #163, 30¢, from Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402.

RESOURCES: Gardens For All, Charlotte, Vermont 05445; Cleveland Public Schools--Peter Wotowiecz, Horticulture Department, Leslie F. Beamish, Home Garden Coordinator; Cooperative Extension, State Department of Agriculture, Four-H, FFA, Local Gardeners and Farmers, parents.

PROCEDURE:

1. INTRODUCTORY COMMENTS: Gardening is an important skill which contributes to self-sufficiency; it is an enjoyable firsthand introduction to environmental and nutrition concepts; its planning and execution develop mathematical and problem-solving skills. A gardening program needs to be tailored to the resources and goals of your community. You can introduce gardening to your students in several ways:

   A. Obtain permission to use school land, nearby goverment land or empty lots for class or school gardens. Begin garden preparation in the spring. If possible, offer a summer school course in gardening. Otherwise, arrange for independent study credit for students who maintain the garden throughout the summer. Use organic methods when possible. Invite families to help set up the garden, erect a cyclone fence, prepare soil, donate plants, seeds or bulbs. Use resource people in the community to share their gardening skills or knowledge.

B. Encourage students to plant a home garden or participate in a community garden. If possible begin seedlings in class. Assemble seed kits for home gardens. Ask local businesses, garden clubs, and food stores to donate funds or materials for the kits. Ask students to keep a log detailing their gardening season. What preparations did they make? What crops did they plant? How did they choose crops? What care and upkeep was necessary? What problems were encountered? How were these problems solved? Who helped? What have they learned for next year's garden? Students should date all entries. Encourage students to include their observations of the garden's progress, as well as personal comments about the garden: what is most fun and least fun, a description of the BEST fruit or vegetable raised, stories related to the garden, with whom and where they shared their vegetables, etc.

C. Encourage students who have no access to home or community garden plots to grow minigardens. Many vegetables--from herbs to tomatoes and summer squash--can be successfully grown in pots or large containers (buckets, oil drums, bushel baskets). Patios, balconies, rooftops are perfect locations for minigardens. If students still can't find room at home, there's ample space on school grounds for container gardens. Many "crops," especially herbs, can be raised all winter, an advantage for schools with no summer session. Have students log the preparations, care, progress, and results of their minigardens.

D. Involve the community and enrich the gardening experience through:

- gardening classes conducted by local resource persons
- planting and harvesting festivals
- special workdays
- gardening fairs

Activity Fifteen

Co-ops

OBJECTIVE: To investigate the operation of food co-ops.

BACKGROUND INFORMATION: Kenah, Karen: "Food Co-ops, Alternatives for Consumers," FFPNFP.

PROCEDURE:

1. Arrange a general introduction to co-ops by a local co-op manager or member.
2. Have students work at a co-op for a few hours. (Make prior arrangements with the co-op; advise students to co-operate and do assigned tasks.)
3. Have students record their observations: How does the co-op differ from other stores? What foods are available? How are decisions made? Are workers volunteer or paid? How do people who work behave towards other workers? customers? the store? How do customers behave towards other workers? customers? the store? Do the people you meet at the co-op seem to like shopping and working there? List some advantages of the co-op. List some disadvantages. What questions do you have about the co-op? Do you prefer the co-op to the supermarket? Why or why not?
4. Have students attend a co-op meeting. What kind of issues are discussed? Who participates in decision making?

Activity Sixteen

Alternative Marketing

OBJECTIVE: To identify alternatives to the supermarket in your community.

BACKGROUND INFORMATION: Kenah, Karen: "Food Co-ops, Alternatives for Consumers," FFPNFP.

RESOURCES: Local consumer groups, PIRGs, City Consumer Adviser, Co-operative Extension.

PROCEDURE:

1. Have students identify community food alternatives--co-ops, buying clubs, farmers' markets, roadside stands, "pick-your-own" farms, public land available for gardening.
2. Compile a list of existing local alternatives.
3. Form small groups; each group should investigate one local alternative. If only one or two alternatives exist, try to arrange a tour for the entire class.
4. Have students work with alternatives and attend meetings. Have them answer the following questions: What is the alternative's major goal? Other goals? How is it run? What is required of members? What foods does it supply? How are decisions made? What are major problems? Could these be overcome? How? Major advantages? What future plans does the alternative have?
5. Have groups compile a short profile on each food alternative. Describe foods available, membership requirements, if any, services and other features. Include name, address, phone number, and contact person. Ask city government for funds to print this list--"Alternatives in OUR Town." Arrange for distribution by consumer groups, city and state agencies, co-operative extension, local libraries, etc.

Activity Seventeen

Cooking Efficiently and Self-sufficiently

OBJECTIVE: To learn to cook efficiently with less processed foods.

BACKGROUND INFORMATION: Lappé, Frances Moore: Diet for a Small Planet, pp. 143-152; Tarr, Yvonne Young: The Up with Wholesome Down With Store-bought Book of Recipes and Household Formulas; Brown, Ed: Tassajara Cooking; Hewitt, Jean: New York Times Natural Foods Cookbook.

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PROCEDURE:

1. Five self-sufficiency skills to try in class:
    - Help students experiment with homemade snacks to replace packaged treats. Have a tasting party of nutritious homemade snacks.
    - Encourage students to prepare their own mixes in class and then experiment using homemade mixes instead of packaged mixes and convenience foods.
    - Assist students in freezing and reheating main dishes and desserts that can be made in large quantities at home and substituted for convenience foods.
    - Have students list five foods that they have never tasted homemade. Share lists in class. Choose from these lists. Teach some basic cooking skills that eliminate the need to buy a can or package, for example: how to make good gravy, how to season effectively, how to make sauces and dressings (mayonnaise), etc.
    - Have students experiment with use of leftovers and unused portions of ingredients as well as leftover cooking water.
2. Try some of these, and other simple "homemade" recipes in class:

QUICK WHOLE WHEAT BREAD

2-1/2 cups whole wheat flour
1/4 cup melted shortening
1-1/2 cups sour milk
1/2 cup molasses
1 teaspoon baking soda
1 teaspoon baking powder
1 teaspoon salt

Place above ingredients in bowl. Stir well. Spoon into greased 9 x 5 pan. Let stand 20 minutes. Bake about 50 minutes at 375°.

PEANUT BUTTER

2 cups raw peanuts, shelled
1/4 cup peanut, soy or safflower oil
1/4 teaspoon salt (optional)

1. Spread shelled raw peanuts in a shallow pan. Place in the oven on middle rack, and bake for 30 to 35 minutes at low heat. Stir occasionally during baking. Check on brownness by removing skins from a few nuts.
2. Remove from oven and cool before removing skins.
3. Transfer roasted peanuts, after removing skins, to an electric blender and blend about one minute. Gradually add the oil, one tablespoon at a time, blending thoroughly. Stop blender from time to time to push large pieces of peanuts away from sides of blender with a rubber spatula. Add salt.
4. Spread on whole wheat or rye crackers for students to taste.
5. Explain that, for home use, peanut butter should be stored in jar with tight-fitting cover in refrigerator for several hours before using. Peanut butter becomes firm upon standing for several hours.

YIELD: One and one half cups

The above recipe may be prepared with a meat grinder, using the finest blade. Stir oil into peanut butter to thin. If your peanuts are already roasted, shell them and begin at step #3. Do not use salted peanuts or peanuts that have been cooked in oil.

Source: Teaching Organic Gardening,
Rodale Press, Copyright 1973.

HOMEMADE YOGURT

To make 1 quart: 1 quart milk (Try using dry milk; use less liquid if
yogurt is runny)
3 heaping tablespoons yogurt (commercial variety)

Heat milk until it almost reaches the boiling point. Pour into bowl. Cool until it is warmer than lukewarm, or until milk feels hot when you put a few drops on your wrist. It should feel hot but not burn. (If milk is too hot the organism grows faster, but the curd may be too thick and tough.) Add yogurt (room temperature), stirring gently. Cover bowl and place on warm blanket. Wrap blanket completely around bowl and let stand for at least five hours. (If it is more practical, let yogurt stand overnight.) Place in refrigerator. Always reserve 1/2 cup yogurt to be used as a culture (or yeast) for the next batch. You need buy yogurt only once; however, if your yogurt becomes too thin, start again with fresh commercial yogurt.

SPROUTS

There are a myriad of different ways to sprout seeds and thousands of recommended containers. One of the simplest and most successful is a mason (or canning) jar (any size, the bigger the container, the more sprouts you can grow) and a piece of cheesecloth.

Choose one type of sprouting seed, or if you wish, a number of different types. Some seeds which sprout well are: alfalfa, sesame, and sunflower seeds, and mung beans, raw peanuts.

Soak overnight, about eight hours, in about twice as much water as it takes to cover the beans. The jar should not be more than 1/8 full of beans--even fewer if using all or mostly alfalfa, which grow very long. It may be wise to rinse the beans before and after soaking.

Drain the excess water the next day, after placing a piece of cheesecloth over the top of the jar and fastening it with a screw-on lid. Place the jar in the cupboard, or some fairly warm, dark area.

Run cold water over the seeds and drain rather thoroughly at least three times a day. In about four days, you will have an impressive little crop.

Basic Rules for Success:
(l) Keep sprouts moist, not wet; (2) keep sprouts warm (they generate heat themselves; (3) rinse often; (4) give them room for air, don't overcrowd.

Bean sprouts have a refrigerator life of 7-10 days. For the first seven days, even after refrigeration, they show a steady increase in vitamin C. Sprouts may be dried and ground into a nutritious, nutty powder to add to salads, baking, nut butters, etc. For sprout recipes and a very complete reference, see The Beansprout Book, by Gay Courter.

PATTI'S SUGARLESS APPLESAUCE

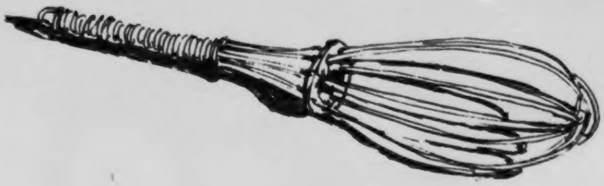
10 medium apples good for cooking
1-1/2 teaspoons pumpkin pie spice
1-1/2 teaspoons cinnamon
1/2 teaspoon lemon, chopped in very small pieces

Chop apples and place in pot with about 1/2 cup water. Add spices and lemon. Cook over medium flame until applesauce. (about 25-30 min.).

SNACK MIX

Combine:
3/4 cup peanuts, roasted
3/4 cup sunflower seeds, roasted
1 cup cashews or walnuts, roasted
1 cup raisins or dates
3/4 cup coconut, toasted

Mix and serve!



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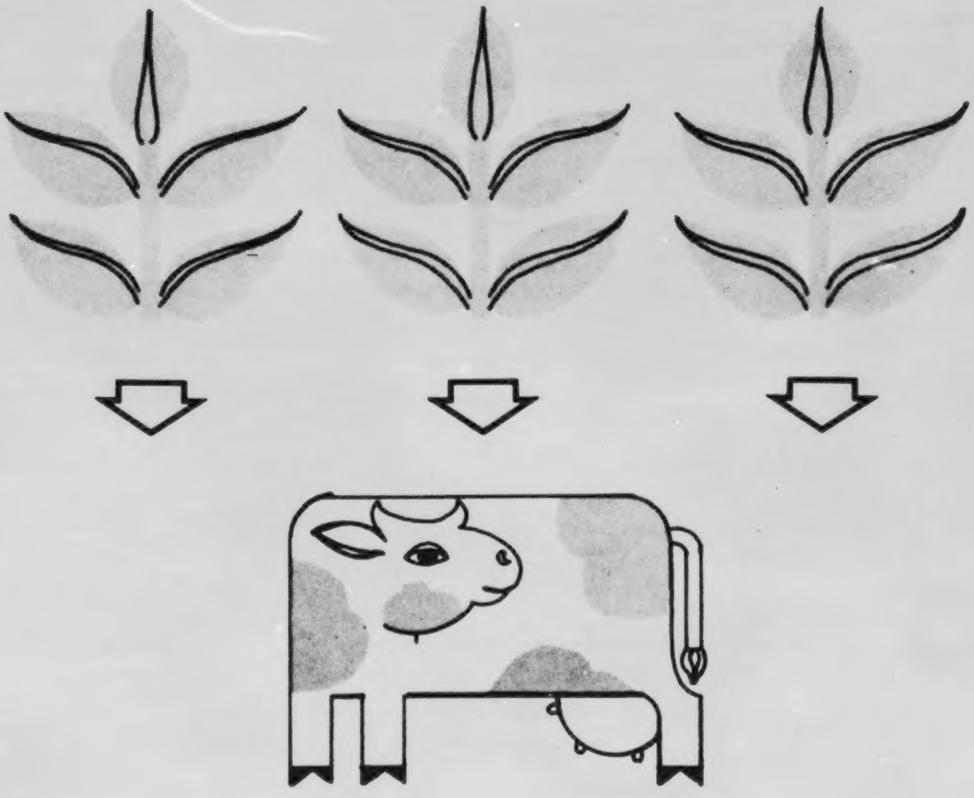
FOOD SUPPLY



The Food System -- From Field to Table

The modern supermarket, where most Americans shop, is a dizzying array of more than 10,000 food items that come from all over the world. Forty percent of items available today did not exist ten years ago; more than 60% are new since World War II. Contemporary Americans do their hunting and gathering in the vast aisles of the supermarket; accurate reading of signs, labels and prices are the skills that have replaced knowledge of the seasons, of terrain, of nature.

In ecology classes students learn about the food chain; humans eat meat or fish (which have eaten smaller animals, grains or grass) and therefore are at the "top" of the food chain. Some food energy is lost at each step of the chain.

Today's food supply involves a "new food chain," consisting of the processing, handling, transporting, storing, and merchandising of food before it reaches the table. Like the food chain of nature, each step consumes energy. In 1970 every calorie of food energy required about nine calories of energy.

The food industry is a giant: the fourth largest industrial user of energy, the employer of about one-seventh of the working population, a complex network with its parts spanning the globe. How many of us know where our food comes from, how it gets to us, and what processes it passes through on the way?

The Food System consists of:

SOURCES OF FOOD: Farmers, ranchers, fishermen. In the past, single family farms comprised most of this sector--from a small truck farm to a 5,000 acre wheat farm in Nebraska. For the last decade 50,000 to 100,000 farms, however, have folded each year. The family farmer, though demonstrated a more efficient producer by government studies, is retreating from the farm as government and corporate policies favor large corporations.

FARM MARKETING: About 120,000 persons who assemble, buy, sell or handle the products of farms and other food producers. This sector of the food industry employs feed lot operators, creamery operators, and grain operators.

FOOD PROCESSING: About 1.7 million people are employed canning, freezing, refining, transforming and manufacturing food. Prior to 1940, few foods were highly processed in the United States. In general, food manufacturers simply used processing techniques that were practiced in the home, such as shelling peas, and canning fruits and vegetables. In the last three decades, food production and marketing have undergone revolutionary changes, resulting in major changes in the American food supply. Simulated foods, formulated foods, textured vegetable proteins and meat analogs (imitation meats) now fill up much of the supermarket shelf.

TRANSPORTATION: An engineer on a freight train bringing cattle or grain from the Western States, a trucker carrying a load of oranges to Minnesota, and a flight crew delivering pineapples from Hawaii are among the more than 600,000 workers employed in transporting food. Transport of foods to faraway markets is critical to today's food system. Most transporting is done by truck.

SCIENTIFIC RESEARCH: The USDA, food companies, and many state universities employ food and agricultural scientists, engineers and marketing experts to create the products and develop processing techniques desired by the food industry. In the last thirty years research has sought to increase efficiency (larger crop yields, more easily shipped vegetables) and minimize costs. Research to improve nutritive value, taste, or to lower retail prices and help small farmers, has been too often neglected.

CHAIN AND WHOLESALE DISTRIBUTION: This link gathers food from farmers and processors throughout the nation and the world and provides the storehouses that stock the country's retail stores. Large retail chains and co-operatives (societies of supermarkets) often own their own warehouses.

RETAIL DISTRIBUTION: Food stores: supermarkets, mom and pop stores, "convenience" stores. Small mom and pop stores and local supermarket chains have been replaced in most parts of the country by mammoth chains, regionally or nationally known, that dominate over 50% of the market. Small grocers have been unable to compete with large, powerful chains which are vertically integrated, possess giant advertising budgets and the "deep pockets" to withstand and buy out even the most efficient, productive competition.

FEEDING THE PUBLIC: Restaurants have become a growing part of the food system as more and more Americans eat out. One in three meals is currently eaten away from home. Franchised restaurants, serving a limited menu of convenience foods, proliferate; eating out to many means a choice between Burger King, McDonald's, Taco Bell, and Kentucky Fried Chicken.

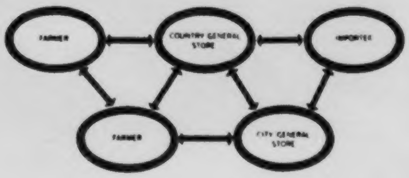
A field trip is worth a thousand classes! Visit as many of the following as possible:

- Farms (Different types: dairy, orchards, cattle, grain, organic, conventional)
- Food processing plants
- Feed Lots
- Grain Elevators
- Food Warehouses
- Wholesale Produce Markets
- Commodities Market
- Supermarket

Charts: The Food System -- From Field to Table

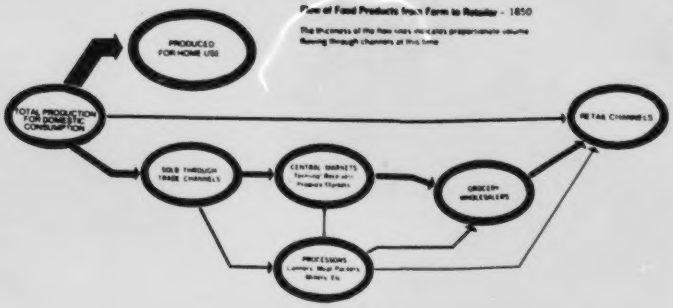
FOOD DISTRIBUTION IN THE UNITED STATES: 1800, 1850, 1900, 1960

Food Distribution in the United States - 1800


FARMER
COUNTRY GENERAL STORE
IMPORTER
FARMER
CITY GENERAL STORE

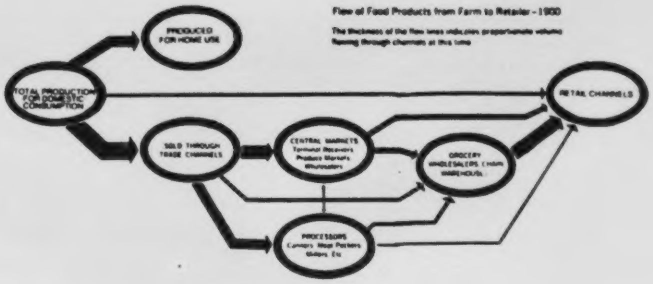
Flow of Food Products from Farm to Retailer - 1850

The thickness of the flow lines indicates proportionate volume flowing through channels at this time


PRODUCED FOR HOME USE
TOTAL PRODUCTION FOR DOMESTIC CONSUMPTION
RETAIL CHANNELS
SOLD THROUGH TRADE CHANNELS
CENTRAL MARKETS Terminal Receivers Produce Markets
GROCERY WHOLESALERS
PROCESSORS Canners Meat Packers Millers Etc.

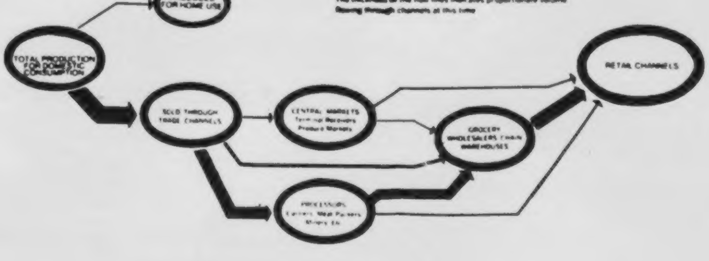
Flow of Food Products from Farm to Retailer - 1900

The thickness of the flow lines indicates proportionate volume flowing through channels at this time


PRODUCED FOR HOME USE
TOTAL PRODUCTION FOR DOMESTIC CONSUMPTION
RETAIL CHANNELS
SOLD THROUGH TRADE CHANNELS
CENTRAL MARKETS Terminal Receivers Produce Markets Wholesalers
GROCERY WHOLESALERS CHAIN WAREHOUSES
PROCESSORS Canners Meat Packers Millers Etc.

Flow of Food Products from Farm to Retailer - 1960

The thickness of the flow lines indicates proportionate volume flowing through channels at this time


PRODUCED FOR HOME USE
TOTAL PRODUCTION FOR DOMESTIC CONSUMPTION
RETAIL CHANNELS
SOLD THROUGH TRADE CHANNELS
CENTRAL MARKETS Terminal Receivers Produce Markets
GROCERY WHOLESALERS CHAIN WAREHOUSES
PROCESSORS Canners Meat Packers Millers Etc.

SOURCE: Hampe, Edward C. and Merle Wittenberg: The Lifeline of America (1964), McGraw-Hill. Reprinted with permission of publisher.

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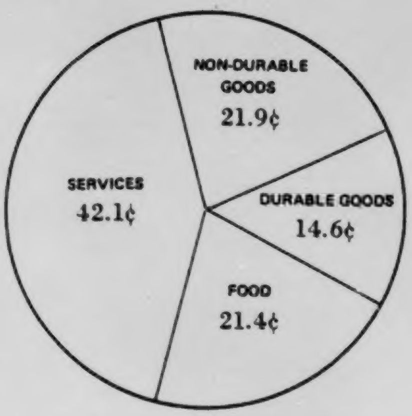
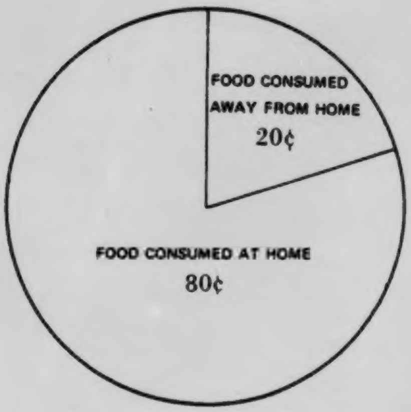
THE CONSUMER DOLLAR



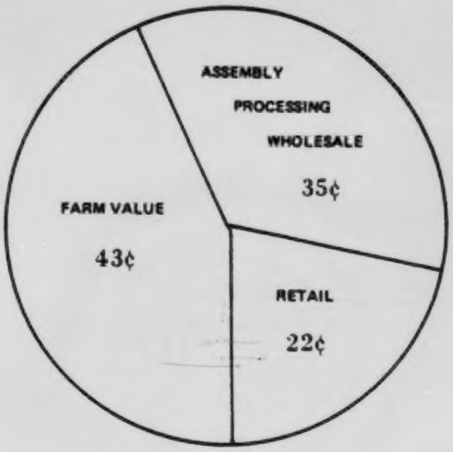
SOURCES: Economic report of the President, February 1975 and USDA National Food Situation, February 1975.
Based on weighted total expenditures of all economic groups.

THE FOOD DOLLAR

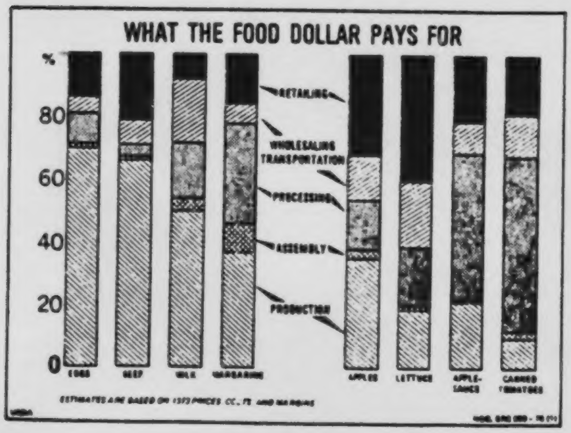


SOURCE: U. S. Dept. of Labor, Bureau of Labor Statistics
Average expenditure patterns of urban wage earners and clerical workers.

WHERE THE FOOD DOLLAR GOES



SOURCE: USDA Publication, August 1974



Activity One

Regional Food Supply

OBJECTIVE: To trace the origin of a food. To determine the costs and benefits of a regionally-based food supply.

RESOURCES: State Department of Agriculture, Cooperative Extension, Local Farmers and Farm Organizations.

MATERIALS: U.S. map; Handout or Transparency with natural resources of the area.

PROCEDURE:

1. Have students choose one food (or an ingredient) they've eaten recently and research the likely origin of the food. (GEOGRAPHIC ORIGIN--state, region, or nation). ENCYCLOPEDIAS, ALMANACS, FACT BOOKS, AND ATLASES CONTAIN INFORMATION ON MAJOR FARM PRODUCTS OF EACH STATE AND NATION. LOCAL MERCHANTS CAN HELP WITH SOME PRODUCTS. YELLOW PAGES LISTINGS FOR FOOD BROKERS (WHOLESALERS) AND FOOD PRODUCTS (MANUFACTURERS) MAY ALSO PROVIDE INFORMATION SOURCES.

2. Have students map the results of research on U.S. map, with foreign products placed outside the country to the east, west, south. Use names or symbols for each food. Reproduce list of food origins and have students calculate per cent of food from out of state and per cent from other nations.

3. Distribute handout or transparency with natural resources of your area as an aid to discussion. Provide worksheet or discuss in class:

   - What are the reasons that food is transported from distant areas? (DIFFERENT CLIMATE, SEASONS, SOIL; AVAILABILITY OF WATER, LAND, INEXPENSIVE LABOR; LOWER TAXES OR OTHER BREAKS FOR BUSINESS, ETC.);

   - What are the benefits of producing and distributing food regionally? (SAVINGS IN TRANSPORTATION COSTS, NON-RENEWABLE ENERGY RESOURCES USED IN TRANSPORTATION; FRESHNESS; MAINTENANCE OF REGIONAL DIVERSITY AND STABILITY; LOCAL EMPLOYMENT; MONEY REMAINS IN COMMUNITY; LESS MIDDLE STEPS REQUIRED (RAISING PRICES), ETC.);

   - Which foods produced far away could be produced closer to home?

   - Which foods produced out of state do you feel add significant nutritive value to your diet?

   - Which foods on your list do you especially like to eat? Where are they from? Are they worth the cost to import?

4. Find a food in the store which is available in both in-state and out-of-state varieties. Compare prices. If a price difference exists, what do you think accounts for this? Is it worth the difference? Class should pool findings to record patterns in prices of in-state and out-of-state foods.

5. Contact local cooperative extension representatives, State Department of Agriculture, local historians, farmers or geographers to determine what crops were once grown locally which are no longer grown. Why did farmers stop growing them? Does State Department of Agriculture have statistics on: percent of food grown

locally--today? 20 years ago? dollar value of import versus export foods; per cent of locally grown food used locally? Would there be any benefit if farmers in your area produced a wider variety of crops? Is the local government doing anything to encourage greater food self-sufficiency in your state?

Activity Two

The New Food Chain

OBJECTIVE: To identify the steps of a food from field to table. To gain skills in identifying resources, and acquiring information.

PROCEDURE:

1. Have students pick a food they've eaten recently or seen in a store. Investigate and diagram the steps the food takes from the field to the table. (RESOURCE SUGGESTIONS: ENCYCLOPEDIA SECTIONS, TRADE PUBLICATIONS)
2. Have students analyze the "New" Food Chain by answering the following questions: How many steps did your food go through from field to table? What points in the "journey" do you think require much energy (i.e., electrical, oil)? Which points require much human labor? What types of workers are responsible for producing the food? What resources are used?
3. Have students write two or three questions they have about some aspect of the food chain. (EXAMPLES: How are foods which require aging, such as pickles, produced? How are large quantities of bread dough kneaded? How is food inspected for quality and sanitation? What are chickens fed? How are sunflower seeds deshelled? Where is beef butchered for a large supermarket chain? (A VISIT TO A FOOD STORE MIGHT PROVIDE STIMULATION.) Questions should shed light on the nature of the "new" food chain.
4. Have students prepare a list of resources to answer each question.
5. Consulting with two other classmates (a research team) and with the teacher, each student should choose one question to pursue in detail. Give research teams time to help each other throughout the process. Encourage students to record all resources used, letters written, etc. and the information gathered at each step. (EMPHASIZE THAT THE ORIGINAL QUESTION MAY NOT BE ANSWERED AND MAY LEAD TO EVEN MORE QUESTIONS, BUT THE IMPORTANT PART OF THE TASK IS TO FRAME A QUESTION, IDENTIFY APPROPRIATE RESOURCES, AND CONDUCT RESEARCH.)
6. Questions and answers can form the basis of a good bulletin board display.

The Structure of the Food System

A small number of hands own and control today's food system, resulting in "economic concentration." The food industry is moving closer to a system "integrated" from field to table. Charts and statistics in Activity One document the enormous power shared by a very few corporations.

Both representatives of the food industry and its critics recognize that structural changes in the industry have greatly affected prices and quality of food. Industry lauds these structural changes, maintaining that growth and profits stimulate individuals and companies to explore new ideas, increase efficiency and improve products. The growth of corporations testifies, they claim, to superior products, efficient production and responsive manufacturing and marketing strategies. Growth is a result of better service, resulting in still better service and consumer savings.

Critics maintain that consumers rarely see these savings. Expansion actually allows the corporations greater control of the market; the lack of competition enables them to manipulate and increase prices and enjoy excessive profits (see Table 2). Unrestrained growth of food corporations does not result from superior products or efficient production, but from favorable government policies, effective political pressures and other advantages of bigness. Smaller firms, which may produce a good quality, reasonably-priced item are squeezed out not by the superior products of corporate giants, but by unfair marketing advantages and political and economic clout.

Corporations expand in three major ways:

HORIZONTAL INTEGRATION is a company's capturing of a greater share of the market for its product. This growth may come through internal expansion (expanding production or building additional plants) or by external expansion (acquiring other businesses which manufacture the same product). If there are two banana growers on an island, and one buys the other, horizontal integration through external expansion occurs. The result of extensive horizontal integration is monopoly or oligopoly (shared monopoly).

DIVERSIFICATION is another method of expansion. A firm acquires businesses that manufacture other products. If our island banana grower buys a mango farm, it diversifies its business. The Campbell Soup Company, well-known for its canned soups, also produces Swanson frozen prepared foods, Franco American products, Pepperidge Farm baked goods, Godiva chocolates, and other food products for retail sale. Borden Foods, well-known for its dairy products, also manufactures Aunt Jane's pickles, Bama jellies, Campfire marshmallows, Cracker Jacks, Drake's cakes and snacks, Frosted Shake, Kava instant coffee, None-Such mincemeat, Old London potato chips, ReaLemon reconstituted lemon juice, Sacramento tomato juice, Wise potato chips and Wyler soup and drink mixes. According to Jim Hightower,

> The independent firms that are being merged into large corporate structures are not failures, not inefficient competitors on the verge of folding. Quite the contrary, they are being bought by the giants precisely because they are competitive, innovative and exhibit favorable growth potential. Frequently the companies that are bought are the leading producers of their respective products.

VERTICAL INTEGRATION involves a firm buying control of as many steps in the production and marketing of its products as possible--from growing the raw product to retail sale. Our hypothetical banana grower buys his own crate-making factory, and purchases banana boats for transport. A grocery store chain such as Safeway processes its own ice cream for sale; a chicken processor such as Holly Farm raises its own chickens, and markets them in its own chicken restaurants; these are examples of vertical integration.

Horizontal Integration, Vertical Integration and Diversification help a firm acquire a larger share of the market for its products. Monopoly or shared monopoly (oligopoly) is widespread in the U.S. economy as a whole, and in the food industry.

What are the consequences of monopoly or oligopoly? According to Dr. H. Michael Mann, Director, FTC Bureau of Economics, "Monopolies and concentration within industry may cost the nation as much as 6% of the gross national product (GNP)--that is, some $60 billion yearly." More specifically, monopoly frequently leads to:

* PRICE FIXING, or the more subtle form of ADMINISTERED PRICING (whereby prices are set by leader companies and are not based on responses to supply and demand);

* EXCESS PROFITS, despite inefficiencies and wastes resulting from a lack of competition;

* HIGH ADVERTISING COSTS: As much as 20% of the sales dollar is used to advertise products that have few real differences, aside from labels;

* SUPPRESSION OF TECHNOLOGICAL INNOVATION;

* BARRIERS TO ENTRY: New competitors face roadblocks put up by concentrated industries; raising large advertising funds and finding distribution outlets is difficult.

Who is regulating the food industry? Three government agencies bear most of the responsibility: U.S. Department of Agriculture (USDA), Food and Drug Administration (FDA) and Federal Trade Commission (FTC).

USDA's functions include agricultural and economic research, soil conservation, forestry, inspections, grading, Federal feeding program, and, above all, maintenance of farm incomes.

USDA has overemphasized the economics of production while not adequately protecting the family farmers' livelihood or insuring the availability of nutritious, low-cost food to all Americans. In the last two decades, 50,000 to 100,000 farms have disappeared each year; the nutritional status of Americans has also been declining. In 1955, 50% of Americans had an adequate diet while in 1965 only 40% of Americans had adequate diets, according to USDA surveys. Both poor farmers and consumers have been losing while large farmers and corporations are benefitting from USDA policies.

Too often USDA policies serve the profit motives of industry. While consumer groups are recommending that Americans reduce meat consumption, USDA is actively promoting the beef industry; USDA has worked in tandem with the agrichemical industry's promotion of pesticides and inorganic fertilizer; what little nutrition education USDA has done has been carefully geared not to conflict with industry viewpoints. The cooperation between USDA and industry is not surprising since many USDA officials were formerly food industry executives. Earl Butz, Secretary of Agriculture, was former Director of Ralston Purina; Clifford Hardin, his predecessor as Secretary, became Vice President and Director of Ralston Purina after leaving his USDA post. USDA-sponsored agricultural research is largely directed towards industry needs--and the research of today shapes the food of the future.

While USDA monitors the quality of agricultural products (and slightly processed foods like milk), FDA monitors more processed foods. FDA is charged with insuring food safety and honest labelling of food. It evaluates the safety of food additives. The agency has moved very cautiously in regulating the food industry. It has worked traditionally on the basis of voluntary compliance and self-regulation within the industry rather than mandatory or legal enforcement. A relatively low budget and consistent staff crossovers between FDA and industry (in 1973, 22 of 52 top officials had worked for regulated industries or organizations that cater to these industries) reinforce FDA's lenient treatment of the companies it theoretically regulates.

The FTC is authorized to prevent "unfair methods of competition"; to prevent dissemination of unfair advertisements; to prevent monopolistic practices; and to enforce truthful labeling, as well as other duties. The agency has done much useful research concerning economic concentration in the food industry, but litigation has been exceedingly slow, while our future

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food supply continues to be shaped daily by large, monopolistic corporations.

And what does the future look like? If present trends continue, the food industry will be dominated by a few giants; vertically integrated conglomerates will control food from field to table; government and private industry will be geared to the marketing needs of these firms; the family farmer will disappear along with ma and pa grocery stores and independently owned restaurants.

As for the food itself, processing is much the trend. In 1975 Alexander Schmidt, Commissioner of FDA, predicted that by 1980 two-thirds of food consumed will be prepared outside the home. A USDA publication states, "The processor is guided by the wants and desires of the consumer and the consumer's demand for food is shifting from raw commodities to more sophisticated products." But with advertising so able to create "wants," "desires" and "demands," it is more and more difficult to distinguish between what consumers really want and what industry, armed with slick advertising, imposes on them.

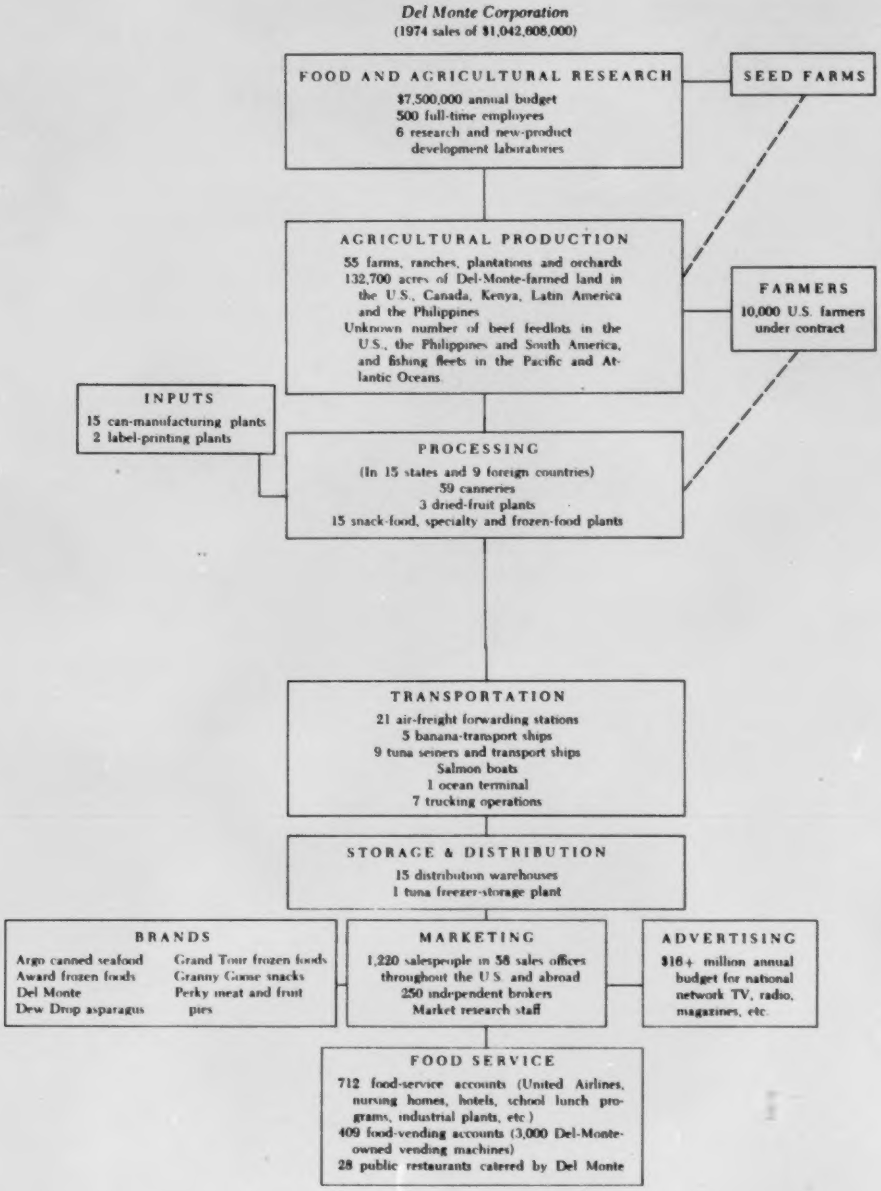
Critics see the trend towards highly processed foods as another indication that profit is the food industry's paramount concern. One company can't sell a tomato, for example, for much more than another company. But process it into ketchup, add spices and a fraction of a cent of flavor, and bottle it; call it barbecue sauce; advertise it; tout its brand-name, and higher and higher profits can be made because the product seems unique.

The next step is to create synthetic ingredients which simulate the taste of tomatoes, and bypass the real vegetable and its difficult handling altogether. We live in an age of simulated foods, formulated foods, textured vegetable proteins and meat analogs. Few of these products provide low-cost nutritional advances for consumers, but they do represent additional profit for food companies.

Decisions that greatly affect our food supply are made daily. Who is making these decisions? Are decisions based on people's needs or corporate profit schemes? Do we want a homogenized food system shaped and controlled by the profit needs of fifty giant corporations? Or, can we provide for present and future food needs with a rational, human policy based on the needs of all the citizens of this nation and the world? What can each one of us do in our community to insure a fair outcome in this fight?

The Structure of the Food System: Tables and Charts

VERTICAL INTEGRATION IN THE DEL MONTE CORPORATION


Del Monte Corporation
(1974 sales of $1,042,608,000)
FOOD AND AGRICULTURAL RESEARCH
$7,500,000 annual budget
500 full-time employees
6 research and new-product development laboratories
SEED FARMS
AGRICULTURAL PRODUCTION
55 farms, ranches, plantations and orchards
132,700 acres of Del-Monte-farmed land in the U.S., Canada, Kenya, Latin America and the Philippines
Unknown number of beef feedlots in the U.S., the Philippines and South America, and fishing fleets in the Pacific and Atlantic Oceans
FARMERS
10,000 U.S. farmers under contract
INPUTS
15 can-manufacturing plants
2 label-printing plants
PROCESSING
(In 15 states and 9 foreign countries)
59 canneries
3 dried-fruit plants
15 snack-food, specialty and frozen-food plants
TRANSPORTATION
21 air-freight forwarding stations
5 banana-transport ships
9 tuna seiners and transport ships
Salmon boats
1 ocean terminal
7 trucking operations
STORAGE & DISTRIBUTION
15 distribution warehouses
1 tuna freezer-storage plant
BRANDS
Argo canned seafood
Award frozen foods
Del Monte
Dew Drop asparagus
Grand Tour frozen foods
Granny Goose snacks
Perky meat and fruit pies
MARKETING
1,220 salespeople in 58 sales offices throughout the U.S. and abroad
250 independent brokers
Market research staff
ADVERTISING
$16+ million annual budget for national network TV, radio, magazines, etc.
FOOD SERVICE
712 food-service accounts (United Airlines, nursing homes, hotels, school lunch programs, industrial plants, etc.)
409 food-vending accounts (3,000 Del-Monte-owned vending machines)
28 public restaurants catered by Del Monte

SOURCE: Hightower, Jim: Eat Your Heart Out (1975), Crown Publishers, pp. 26-27. Reprinted with permission from the publisher.

TABLE 1

1973 ADVERTISING BUDGETS OF MAJOR FOOD PRODUCERS

		Percent of Sales
General Foods	$ 180,000,000	8.1
Heublein Inc. (Kentucky Fried Chicken, Smirnoff vodka)	77,800,000	5.9
Coca Cola	76,000,000	3.5
General Mills	74,200,000	3.7
Kraftco Corp. (cheeses)	74,000,000	2.4
Nabisco	69,050,000	6.8
Distillers Corp. - Seagrams	65,192,000	3.9
Norton Simon, Inc. (Wesson, Hunt)	61,700,000	5.1
PepsiCo	58,000,000	4.4
Pillsbury Co.	50,000,000	5.0
Standard Brands, Inc. (Planter's, Fleischmann)	50,000,000	4.5
McDonald's Corp.	46,500,000	3.1
Kellogg Co.	45,000,000	5.4
Campbell Soup Co.	40,000,000	3.7
Ralston Purina Co.	38,500,000	1.6
Anheuser Busch, Inc.	36,520,000	2.5
Joseph Schlitz Brewing Co.	34,500,000	3.9
CPC International (Skippy, Hellmann's)	34,200,000	4.0
Wm. Wrigley Jr. Co.	28,100,000	12.1
Thomas Lipton Inc.	28,000,000	6.9
Seven-Up Co.	27,358,000	18.6
Nestle Co.	27,000,000	4.5
H. J. Heinz Co.	26,000,000	1.8
Quaker Oats Co.	26,000,000	2.6
National Distillers & Chem. (Almaden wine, whiskey)	23,500,000	1.9
Hiram Walker (whiskey)	23,000,000	2.7
Carnation Co.	21,000,000	1.4
Mars Inc. (candy)	19,000,000	12.3

Estimates taken from Advertising Age, August 26, 1974, reprinted with permission. Copyright 1974 by Crain Communications, Inc.

TABLE 2
CONCENTRATION IN THE FOOD INDUSTRY

Product	Percent of Market Held by Four Largest Firms in 1966
Creamery butter	50
Natural cheese	60
Condensed and evaporated milk	50
Ice cream	70
Fluid milk	60
Canned specialties	80
Canned fruits and vegetables	40
Dehydrated fruits and vegetables	50
Frozen fruits and vegetables	40-50
Flour meal	45
Cereal preparations	87
Rice milling	45
Blended and prepared flour	75
Wet corn milling	67
Bread and related products	50
Biscuits and crackers	70
Raw cane sugar	50
Cane sugar refining	40
Beet sugar	40
Confectionary products	40-50
Chocolate and cocoa products	85
Chewing gum	88
Malt liquor	65
Wines and brandy	41
Distilled liquor	55
Flavorings	63
Shortening and cooking oils	80-90
Food preparations	60-70

Reprinted with permission: William G. Shepherd, Market Power and Economic Welfare, New York: Random House, 1970, Appendix Table 8, p. 263.

TABLE 3
PROFIT RATES OF FOOD MANUFACTURERS ASSOCIATED WITH LEVELS OF INDUSTRY CONCENTRATION AND ADVERTISING-TO-SALES RATIO

Advertising-to-sales ratio (Percent)	Associated net firm profit rates as a percent of stockholders' equity				
	1.0	2.0	3.0	4.0	5.0
Four-firm concentration:*					
40%	6.3	7.4	8.5	9.6	10.7
45	8.0	9.1	10.2	11.3	12.4
50	9.3	10.4	11.5	12.6	13.7
55	10.3	11.4	12.5	13.6	14.7
60	11.0	12.1	13.2	14.3	15.4
65	11.4	12.5	13.6	14.7	15.8
70	11.5	12.6	13.7	14.8	15.9

* The average concentration ratio (weighted by the company's value of shipments) of the product classes the company operated in 1950.

Source: Federal Trade Commission

Activity Three

Factors Influencing the Price of Food

OBJECTIVE: To predict the effect of various factors on food prices.

MATERIALS: Situation cards: a full set per group.

PROCEDURE:

1. Prepare Situation Cards (3 x 5 index). Type one statement per card. Prepare one full set for every five students.

   A. A team of medical researchers confirms the role of Vitamin C in preventing the common cold.

   B. Someone invents an orange-flavored drink which contains an amount of Vitamin C equal to that contained in oranges, but the new drink costs half as much to produce as natural orange juice and many people think it tastes better.

   C. A Florida Land Grant College develops methods which quadruple orange yields at a minimal cost to growers.

   D. The U.S. Government signs a trade agreement with the Soviet Union that one-fourth of all oranges grown in the United States over the next five years will be traded to Russia in exchange for vodka and caviar.

   E. "White's" Oranges begins a massive advertising campaign on TV, billboards, radio and magazines claiming that its oranges are the "juiciest, sweetest, yummiest" oranges in the world. Their sales rise, influencing other companies to advertise more.

   F. "Whites," producing a large share of the oranges on the market, decides to expand vertically. It purchases trucks, orange-crate factories, wholesale warehouses, label-printing factories, an advertising agency and hires a 500-person sales staff nationwide. It gains a larger share of the market and several small companies go out of business.

   G. Due to rising petroleum prices, the cost of nitrogen-based fertilizer has nearly tripled in the last five years. This fertilizer is widely used in commercial cultivation of oranges.

   H. The Federal Trade Commission decides that "Whites" and two other orange growers control too much of the market. FTC initiates antitrust actions; large firms are required to sell some of their holdings to small farmers in the area.

2. Familiarize students with the major factors that may affect the price of food. DISCUSSION GUIDELINES: FACTORS WHICH MAY RAISE THE PRICE OF A FOOD PRODUCT:

   SUPPLY:
   * Decreased supply of a crop due to: weather, disease, critical shortage of necessary inputs (fertilizer, water for irrigation, seeds),
   * Control of supply by industry (manipulating quality standards, destroying excess produce or surplus) or government (market order boards),
   * Increased exports to other nations.

DEMAND: Increased demand for a food product due to:

- consumers having more money to spend on food
- new process or variety with improved features
- higher prices of other foods
- new advertising campaign

INPUTS:

- Rising cost of agricultural inputs (fertilizer, pesticides, human labor, fuel for machinery and irrigation, and farm machinery)
- Rising costs of food processing inputs (fuel, machinery, chemicals, other food products such as sugar in canned fruits, human labor and packaging)

STRUCTURE: Concentrated control of an industry or product magnifies the other factors responsible for price rises. Concentrated control may result from:

- HORIZONTAL INTEGRATION (where one or a few firms control a large market share for a product) in farming, processing, packaging, wholesaling, and retailing
- VERTICAL INTEGRATION (where one firm owns and controls various stages of production from field to finished product)
- DIVERSIFICATION (where a company uses profits from one product or product line to finance acquisition of other products)

PRODUCT CHANGES:

- New processes
- Switch to better quality ingredients
- Increases in packaging (added cost but no substantial change in product)

OTHER:

- Increased expenditures of companies due to research or advertising
- New laws or requirements
- Legal action, such as antitrust
- Contributions or political bribes

3. Divide class into groups of about five students.
4. INTRODUCTORY REMARKS: "Imagine that you are a member of the Presidential Economic Advisory Board. Your task is to predict changes in the price and consumer demand for oranges in a given situation."
5. Pass out situation cards, one at a time at ten-minute intervals. As the groups receive each situation card, have them predict how and why the price of oranges would be affected. Discuss each situation briefly at the end of each interval.

DISCUSSION GUIDELINES:	SITUATION	PREDICTION
	A	Demand rises - price rises
	B	Demand falls - price falls
NOTE: These are simplified predictions. Short range and long range effects may differ. Encourage students to disagree with or amplify predictions and justify their answers.	C	Supply rises - price falls
	D	Supply falls - price rises
	E	Input costs rise - price rises
	F	Increased concentration of ownership - price rises
	G	Input cost rises - price rises
	H	Decreased concentration of ownership - price falls

6. FOR DISCUSSION: (A) Does this exercise reflect realistic product-price fluctuations? (B) In the case of oranges, would price change have any affect upon the

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wages and working conditions of orange-grove workers? Why or why not? (C) What measures could be taken to keep orange prices from rising rapidly in each situation?

Activity Four

Future Food Options

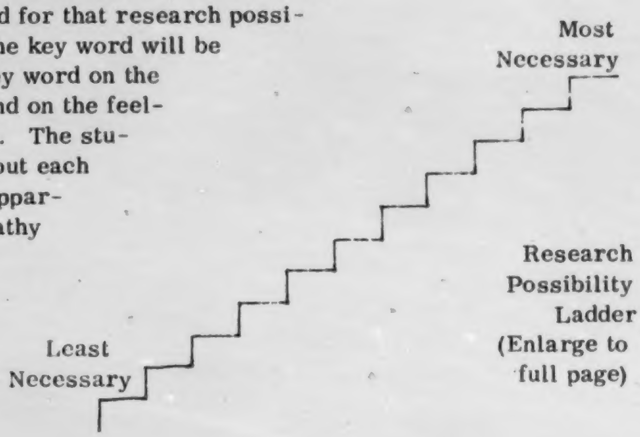
OBJECTIVE: To rank research options for improving food of the future. To identify people and institutions who make food research choices.

BACKGROUND INFORMATION: In FFPNFP, McCarthy, Colman: "Bon Chemical Apetit"; Homer, Habibi and Jacobson, Michael: "The Frozen Fruits of Government Research"; Hightower, Jim: "Hard Tomatoes, Hard Times"; Hightower, Jim: Eat Your Heart Out, pp. 95-111.

MATERIALS: Assorted materials on food technology: Write Institute of Food Technologists, Suite 2120, 221 North LaSalle Street, Chicago, Illinois 60601, for sample copy of Food Technology (published monthly) and other available literature, or check out at local library.

PROCEDURE:

1. Allow students to scan literature on food technology. Discuss how agricultural research and food technology research influence future food options.
2. Have the students draw a RESEARCH OPTIONS LADDER with 11 steps. Above the top step write "Most Necessary," below the bottom step write "Least Necessary."
3. Explain that a list of 11 research possibilities to "improve the tomato" will be read. As each alternative is presented, the student will place the key word for that research possibility on one of the steps. (The key word will be given.) The location of the key word on the ladder (high or low) will depend on the feeling of the student (pro or con). The student must make a decision about each alternative regardless of an apparent agreement with all, or apathy towards some. The student may change the placement of the items on the ladder as new alternatives are presented.



Research Possibility Ladder (Enlarge to full page)

4. Ask for ten volunteers from the class. Three will represent nutritionists whose major concern is improving the tomato's nutritive value. Two will represent tomato growers who wish to increase yields. Two will represent food processors and transporters who want easy-to-handle tomatoes. Three will represent wholesale and retail merchants who wish to sell more tomatoes. Have these students fill out their RESEARCH OPTIONS LADDER according to the interests of the people whose role they play.

5. THE LIST OF RESEARCH OPTIONS:

   * A juicier tomato will be tastier to many consumers, but harder for growers and big processors to handle and ship long distances. (JUICIER)
   * A longer lasting tomato could be picked ripe, shipped and stored for a few days without spoiling. (Tomatoes today are often picked when green and immature, and artificially ripened with ethylene gas before sale, resulting in a less tasty and possibly less nutritious food. (LONGER LASTING)
   * A harder tomato would be easier to ship. (HARDER)
   * A more nutritious tomato would contain more vitamins and minerals, improving its food value. (NUTRITION)
   * A better tasting tomato would be pleasing to consumers who depend on a little touch of tomato to spice up their salads, sandwiches, and other meals! (TASTE)
   * A bigger tomato would look impressive in a store's produce department, and would sell better than a small tomato. (BIGGER)
   * A square tomato would be easy to ship and to stack. (SQUARE)
   * A redder tomato would look more impressive in a store's produce department and might sell better than a less brilliant tomato. (REDDER)
   * A tomato that grew faster with large quantities of fertilizer would increase the yields of tomatoes produced each season. (QUICK GROWING)
   * A tomato plant which made better use of available nutrients in the soil would require less fertilizer. (EFFICIENT)
   * An imitation tomato flavor, synthesized in the laboratory and artificially colored red, could replace real tomatoes in cooking. (SYNTHETIC)

6. Allow a few extra minutes to check final arrangements.

7. Compare the responses of the class. First, have students who recorded their own feelings on the ladder. Discuss their rankings. What criteria did they use to rank options? Did this differ from the rest of the class in any way? Continue by having "role-players" discuss their rankings. How do their replies differ from the rest of the class? Why?

8. FOR DISCUSSION: What people or institutions actually make decisions about the research done on the tomato and other foods? What do you think their research priorities are? Why? Do you think any of the research possibilities are neglected by those making the decisions? Why? Should these be given more attention and funds? How can you find out what kind of research is actually being done?

Activity Five

Advertising and Prices

OBJECTIVE: To understand how advertising affects food prices.

BACKGROUND INFORMATION: Nader, Ralph and Beverly Moore: "Competition and Consumer Sovereignty," FFPNFP; "Profit Rates of Food Manufacturing Firms Associated with Levels of Industry Concentration and Advertising-to-Sales Ratios" (see p. 136).

MATERIALS: "Advertising and Prices: Two Positions!"

PROCEDURE:

1. ADVERTISING AND PRICES: TWO POSITIONS:

   A. CRITIC OF THE FOOD INDUSTRY: The average market share of the four leading firms for all food products is 55%, a figure denoting oligopoly! When a few companies share an oligopoly they share common interests and tend not to compete on the basis of price. Instead, they use advertising to convince consumers of trivial differences between the products. Product A is "creamier," "lighter," "brighter," "smoother," "crisper," and "more natural;" its advertising doesn't reveal if it is more nutritious or cheaper than its competitors.

   Most advertising provides no useful information to consumers; yet its cost drives up food prices. Consumers foot the bill for more than four billion dollars worth of advertising every year. Moreover, small companies, which cannot afford much advertising, are hampered by large corporations' advertising budgets. This allows the existing large firms to keep prices high. Advertising, unfortunately, does not give the consumer information so that he or she may intelligently choose between products and make the best possible buy. Instead big firms use advertising to create demand for their product, and to convince consumers that their product is better than others which simply aren't advertised as much!

   B. REPRESENTATIVE OF THE FOOD INDUSTRY: Advertising actually lowers the prices of our products! Through advertising we inform consumers of different products available, providing more information than they could get from scanning a grocery store shelf. We give consumers ideas for using our products and an appreciation of the enjoyment that they will get from it. Consumers need this information about new products, and they need new ideas in order to keep buying older products, and use them creatively. Ads give consumers the information they need to make intelligent purchases.

   Advertising creates a demand for products; this increased demand allows the company to sell more, which enables us to lower prices. The cost of advertising is small compared to the extra revenue the company makes through added sales--and this extra revenue provides savings for the consumer.

2. Discuss the two statements. What does each identify as the purpose of advertising? How does it raise prices according to the first speaker? How does it help to lower prices according to the second speaker? Which argument sounds more plausible?

Activity Six

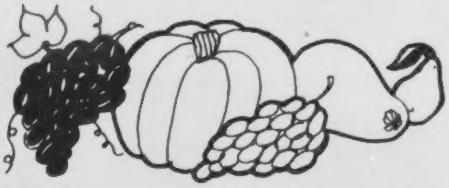
The Nature and Extent of Advertising

OBJECTIVE: To determine the extent of food advertising. To decide if advertising provides consumers with useful information.

BACKGROUND INFORMATION: Table 1: "1973 Advertising Budgets of Major Food Corporations" (see p.134.)

PROCEDURE:

1. Have students survey two magazines. These magazines should be the same "type" (i.e., family, news magazines, fashion magazines) and preferably issued at about the same time.
2. Have students record all advertisements found in each magazine on separate pages. A five-column worksheet will help in collecting the information. (COLUMN ONE: The Manufacturer and Product Name; COLUMN TWO: The size of each ad in pages, or fraction thereof; COLUMN THREE: Informational Content (check this column if the ad contains helpful nutrition, food quality or price information); COLUMN FOUR: Non-informational content (check this column if the ad consists mostly of recipes, slogans, undocumented claims of high quality, coupons, contests, etc.); COLUMN FIVE: Reason to buy (a short phrase describing the main motivation offered for buying the product).
3. Have students write a brief summary of data citing major advertisers, type of foods most frequently advertised (desserts, main dishes, snack foods...), and frequency of informational vs. non-information ads.
4. Students should pool data to determine which food companies advertise extensively. What kinds of products are most frequently advertised? Are some foods advertised in many different types of periodicals? Are these products also advertised heavily on television and billboards? Which magazines contain the most food ads? Why do you think this is so?
5. Have students select most frequently advertised products and compare their prices with other little-advertised brand name products and store brands. Which prices are higher? Why? Post the result of these comparisons on the bulletin board, or mimeograph them for the class to discuss. Which of the two arguments in Activity 5 is supported by the price comparisons? Would this be true in all cases?
6. Have students choose a product with non-informational advertising. Have them create an informational ad which would help consumers make food choices. Have a committee of students write an article for local paper contrasting the existing ads with student-designed ones.



Activity Seven

Food for People Not for Profit

OBJECTIVE: To survey attitudes on people's right to food and the responsibility of government and the food industry to provide high quality, low-cost food.

BACKGROUND INFORMATION: Holden, Constance: "Is America Due for a National Food Policy?," FFPNFP; Hightower, Jim: Eat Your Heart Out, pp. 228-250.

PROCEDURE:

1. Ask the following questions, or similar ones, to each person interviewed:
    - A. Should everyone be guaranteed an adequate diet?
    - B. Should there be as many ads for good nutrition as for food products?
    - C. Should people be informed of nutrition information at the place they purchase food?
    - D. Is all food "good food"? If not, should bad food be sold? Who should decide?
    - E. Is the government doing an adequate job of insuring the quality and safety of foods?
    - F. Is the government doing an adequate job of insuring healthy competition in the food industry?
    - G. What is the most important responsibility of the food industry regarding nutrition and the quality of food? Of government? Consumers? Health professionals? Others in the community? Is each group doing an adequate job?
2. Have students answer questions A-G. Compile results and discuss answers. There are no right or wrong answers.
3. Have students compose a list of people in the community to survey. (EXAMPLES: food manufacturers, food store owners, managers, workers, government officials, farmers, consumers, nutritionists, doctors).
4. Groups of three or four students should survey one of the categories identified by the class.
5. Have each group compile the results of its survey.
6. Form an Action Committee. Have committee compile total results in a table.
7. DISCUSS: What differences in attitudes exist between the various types of people interviewed? On which questions do most agree? What questions provoke the most disagreement? Which people interviewed seemed most concerned with pro- or viding good nutrition for all people? What are they doing about it?
8. Have Action Committee write up the survey for local newspapers, including both numerical results and the class's interpretation of data.

Activity Eight

Sugar--A Congressional Hearing

OBJECTIVE: To identify health problems associated with sugar. To simulate a congressional hearing, and identify factors affecting government policy.

BACKGROUND INFORMATION: Choate, Robert B.: "The Sugar-Coated Childrens' Hour"; Nizel, Abraham: "Sugar and Tooth Decay," FFPNFP; "The Sugar Content of Fabricated Foods," FFPNFP, pp. 168-170.

MATERIALS: Copies of testimony for each student.

PROCEDURE:

1. Ask for six volunteers to role-play witnesses in congressional hearing. Each witness should be assigned an aide to help with further research, and discuss testimony.
2. Appoint three students to be members of the Congressional committee: Senator A is from Hawaii (a principal sugar-producing state); Senator B is an outspoken consumer advocate; Senator C is particularly interested in medical care.
3. Ask class to keep these questions in mind while listening to the testimony of each witness: Does the witness support or oppose placing a warning on foods containing sugar? What are his/her major reasons for this position? What interests does this person represent? How is this reflected in the testimony? What questions would you like to ask of this person? Is this witness omitting important facts from his/her testimony?
4. Give each witness a 5"x 7" card with his/her position on it, and a copy of the proposed sugar warning.
5. Allow students time to consult with their aides, to do further research if necessary and to prepare for the hearing.
6. Each witness will make a statement. Class members may ask questions to clarify opinions and facts. The students appointed as senators may ask any additional questions related to the issue.
7. At the close each senator should make a position statement.
8. PROPOSED WARNING: "This product contains x % sugar. Frequent use contributes to tooth decay and other health problems."

TESTIMONY:

A. REPRESENTATIVE OF A NATIONAL ADVERTISING ASSOCIATION. Advertising plays an important role in the American economy. Consumers are exposed to the full range of items available and can make intelligent, deliberate choices based on the information provided by advertisements.

The advertising of sugar and sweets should not be hampered by a warning that wrongly scares consumers. Sugar, when consumed in moderate amounts, is a healthful and delicious food.

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Advertisements that claim sugar is an energy food, necessary for our busy lives, are neither false nor misleading. Of course, sugar is only one component of a well-balanced diet. Excessive use can be harmful to one's health, as can overuse of other foods. It is the individual's responsibility to monitor his or her diet.

B. PRESIDENT OF SWEETO SUGAR COMPANY

Carbohydrates are a necessary source of nutrients. About one-third of the carbohydrate consumed by Americans is sugar. Without it we would have a hard time getting enough calories and might burn protein for calories instead of sparing protein to build tissues and enzymes. Sugar is usually eaten with a nutritious food such as milk. It makes many otherwise ordinary and boring foods tasty and exciting, especially for young children. Sugar provides jobs; it is important to our economy and is an important commodity in world trade.

C. PRESIDENT OF SWEETEE CANDY COMPANY

Today's Americans do adore sweets, but sugar consumption has not changed in the last forty years. Sugar intake has remained stable for a good while. The candy bars we manufacture provide that special energy lift so important for growing children and busy adults. Sugar adds to the enjoyment and the texture of foods. We all know that we eat because we like to, not just to provide nutrients for our bodies. The benefits of sugar are obvious to us all. Although sugar is often cited as a cause of tooth decay and obesity, a combination of complex forces are responsible for these diseases that are unfairly attributed to sugar itself.

D. NUTRITIONIST

Health professionals have long agreed that sugar is a major factor in obesity and tooth decay. Some evidence also links sugar to a variety of diseases, including diabetes and heart disease. The National Institute of Health has recommended that people with a certain type of heart disease eliminate sugar from their diet. Sugar provides empty calories--it contains no vitamins, minerals or proteins and squeezes more nutritious foods out of the diet. In 1880 the average American ate forty pounds of sugar per year; in the 1970's this has risen to over one hundred pounds per year. We don't need sugar! Starches such as cereals, potatoes and fruits are better sources of carbohydrates--these foods contain valuable nutrients and are less harmful to our teeth and bodies.

E. DENTIST

Dental caries (the technical name for cavities) afflict 98% of the U.S. population. The last comprehensive government survey revealed that an adult has an average of eighteen decayed, missing or filled teeth (out of 32!) Dental problems can cause pain, infections, chewing impairment and malnutrition, and are costly. America's dental bill is $3 billion yearly, and many dental problems remain untreated. Studies have shown conclusively that sucrose is the major factor in tooth decay. The stickiness of sweets and the frequency with which they are eaten also determine the likelihood of decay. The safest precaution is to avoid all foods with added sugar.

F. CONSUMER REPRESENTATIVE

Consumers need informative advertising and labeling in order to make sensible food choices based on facts. It is not only what is included in ads which is important, but also what is left out. "It isn't just good flavor, it's good food" is one of the slogans of the sugar industry. This is a highly disputed, misleading statement, ignoring known dangers of sugar consumption. "Sugar isn't the only nutrient in an ice cream cone," another advertising line, implies that sugar is a nutrient, a debatable claim. Sugar supplies nutrients only if one considers calories a nutrient. Sugar consumption has increased dramatically in the last one hundred years, and Americans consume more and more sugar unknowingly in processed foods from ketchup to kidney beans. Consuming sugar is no longer a matter of choice. It is the corporation's responsibility to provide truthful and complete labeling, even if this reveals the potential hazards of a product.

9. Discuss questions on the board. Which testimony did students find most convincing? Which did students find least convincing?

10. FOLLOW UP: What is the purpose of a congressional hearing? Is it to make a decision at the time? Or to listen only? Do you think that government officials use the information disclosed in a public hearing? Must they consider it by law? What kind of pressures might convince public officials to ignore public opinion? Do you feel helpless about influencing decision-makers? Is there some way that you can strongly affect decision-makers? Who else should have testified at this hearing? Who do you think should make decisions regulating the quality and advertising of food? Government? Industry? Consumers? Who should make decisions on the following issues: use of food additives in food, the type of food available in public schools, extensive advertising of sugary foods on children's TV?

The Food System and the Environment

America's food is produced and marketed in an energy-intensive system that has tremendous impact on the environment. American agriculture is highly productive but often abuses the environment. Many scientists fear that the short term benefits will be eventually replaced by disaster. Several problems are arousing concern:

CHEMICAL PESTICIDES:

Pesticides and herbicides have contributed to an average 60% increase in crop yields since 1950. Still, scientists estimate that almost a third of all crops are lost to insects and other herbivores, weeds, plant diseases and fungi. Sales of pesticides have increased about 15% per year for almost twenty-five years.

PROBLEMS:

* American monoculture is more susceptible to pests than agricultural systems growing a mixture of crops in one area; a new strain of wheat rust destroyed 75% of the 1954 harvest; in 1970, 15% of corn was lost to leaf blight;

* Increasing use of chemical pesticides is a problem because pesticides are made from petroleum, a non-renewable resource;

* Massive use of pesticides disrupts the natural ecology of an area, killing not only pests but helpful creatures such as natural enemies of pests;

* The target pest may evolve a genetically resistant strain if primarily one pesticide is used;

* Pesticides accumulate in human and animal tissues creating serious health and survival problems;

* Farm workers suffer disease and death from exposure to large doses of pesticides.

ALTERNATIVE SOLUTIONS:

* Cultivation Practices: A mixture of crops and use of different strains of the same crops instead of monoculture would decrease the likelihood of pests damaging an entire crop;

* Conservation measures: Farmers often use pesticides unnecessarily; farmers could

replace current preventive dousings with a treat-only-when-necessary policy;

* Integrated pest control: biologic control practices (using natural enemies, sterile males, sex hormones, insect attractants, complimentary plantings);

* Genetic research to develop resistant strains.

FERTILIZER:

Farmers of the past used manure and crop rotation (organic methods) to replenish the soil's nutrients. Enormous increases in the use of inorganic or chemical fertilizer have allowed for dramatic crop increases in the last twenty-five years. Fertilizer demand has been increasing at the rate of approximately 6-7% every year, though recent high prices may reduce that rate.

PROBLEMS:

* Petroleum, a non-renewable natural resource, is a raw material of nitrogen fertilizer. The manufacturing process requires a great deal of fuel, also derived from petroleum;

* 40-50% of fertilizer is lost as runoff, and is carried into streams and rivers where it causes eutrophication (excessive plant growth);

* Soil treated with inorganic fertilizers still loses value since the humus--the organic content of the soil--is not replaced. Good soil structure is crucial for permeability and aeration, water retention, the support of useful soil organisms;

ALTERNATIVE SOLUTIONS:

* Breeding of hybrid crops less dependent on fertilizer, that use available nutrients more efficiently;

* Conserving fertilizer: low prices for fertilizer in the past have encouraged wasteful methods of application and use;

* Crop rotation: the growing of nitrogen-fixing legumes returns nutrients to the soil naturally. These crops can be alternated with other crops;

* Recycling nutrient wastes: Animal manure and crop residues are often dumped directly into waterways. Sewage plants treat human and some livestock wastes and dispose of the still nutrient-filled water into waterways, resulting in excessive plant growth and pollution. Wastes can be applied to agricultural land instead, returning necessary nutrients to the soil and avoid water pollution. This is called LAND TREATMENT. One major problem is that urban waste is likely to be contaminated with heavy metal pollutants (such as lead and cadmium).

WATER:

Large quantities of water are essential to much of today's agriculture. Agriculture accounts for 86% of water consumption in the United States, more than any other activity. Irrigation has enabled us to produce more and better crops in many dry parts of the country, particularly in the 17 western states.

PROBLEMS:

* The use of large quantities of water for irrigation may cause water shortages, especially in some western states;

* Huge quantities of scarce western water are allocated for energy production;

* Pollution of water: fertilizer nutrients, livestock wastes, silt and chemical residues are contaminating water.

ALTERNATIVE SOLUTIONS:

* Conservation measures: Much of current agricultural use is wasteful and can be reduced;

* Allocation of water for other uses must be carefully weighed against agricultural needs;

* Genetic development of less water-dependent crop strains;

* Improved sewage treatment facilities.

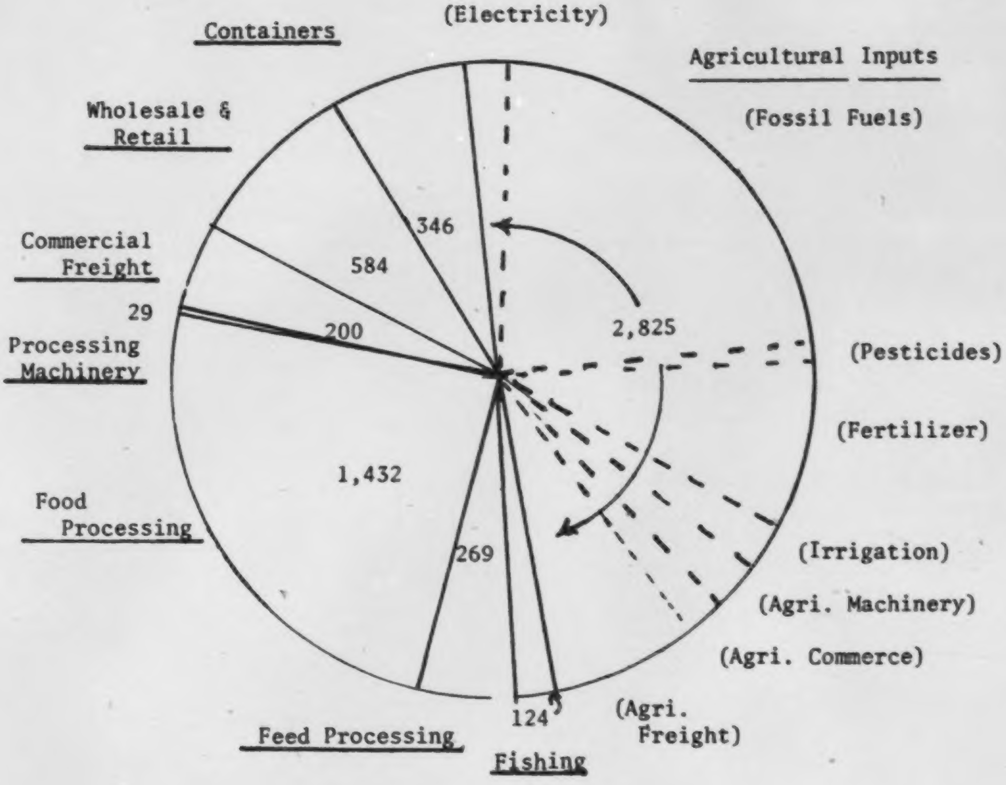
* Use of plastic-lined waterways and field covers.

Environmental problems are not confined to agriculture--throughout the food system the use of natural resources is wasteful and often destructive to the environment. The processing, transport, marketing, and home and restaurant preparation of food products consume large units of energy and resources. Every

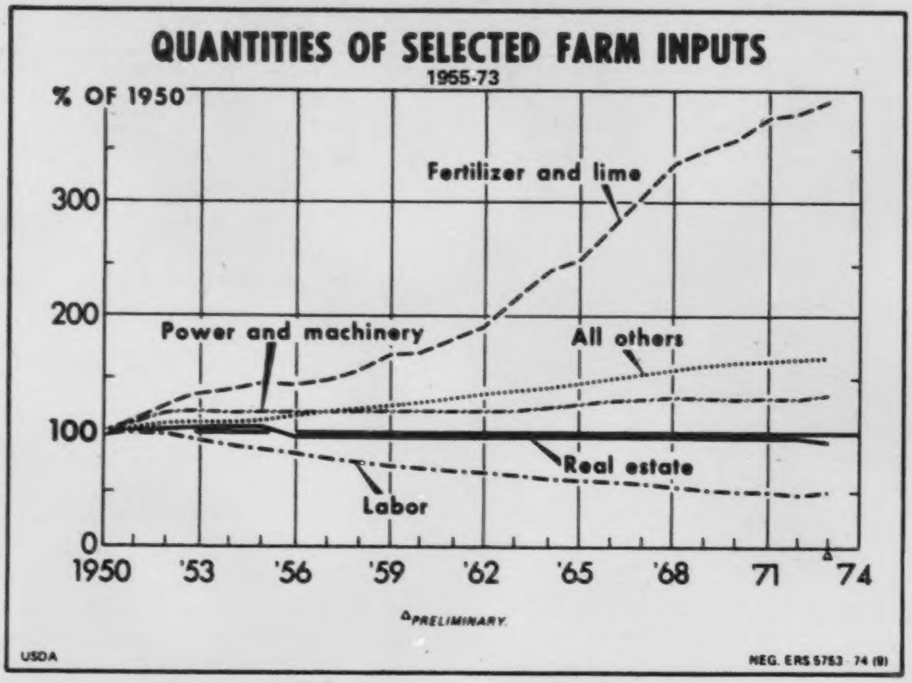
The Food System and the Environment: Charts and Graphs

TOTAL AGRICULTURAL AND COMMERCIAL FOOD ENERGY INPUTS

(in trillions of Btu's)

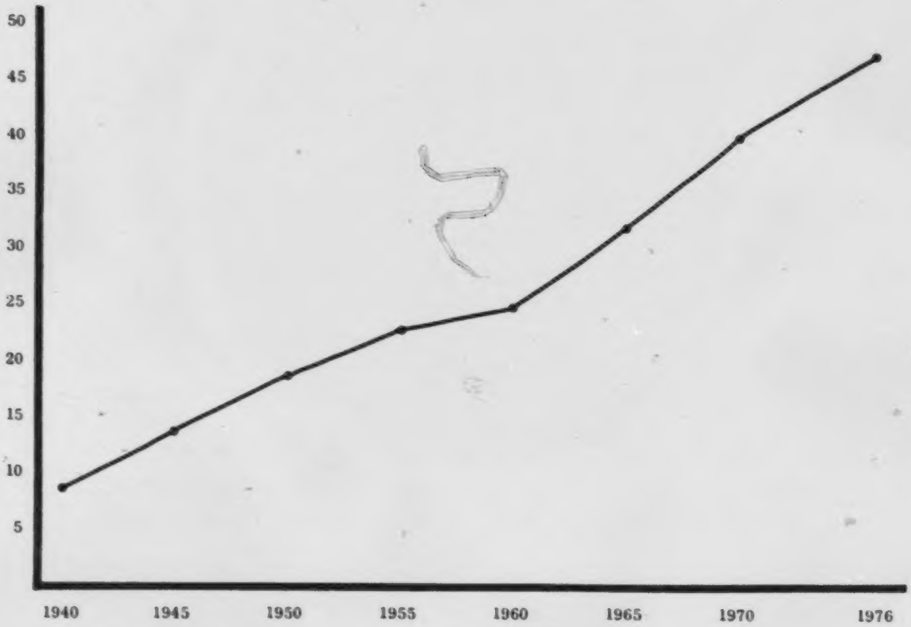


SOURCE: Fritsch, Albert J., Linda W. Dujack and Douglas A. Jimerson: Energy and Food (1975), Center for Science in the Public Interest. Fig. 1.



SOURCE: 1974 Handbook of Agricultural Charts, Agricultural Handbook No. 177, USDA, p. 12.

FERTILIZER USE IN THE UNITED STATES: 1940-1976 (in millions of tons)



SOURCE: Derived from USDA estimates.

calorie of food we eat requires about nine calories to produce.

Certainly an adequate food supply is essential, and some energy use yields impressive crop increases. Conservation measures are necessary, however, since the use of energy and natural resources can have a tremendous impact on the environment. Moreover, unnecessary waste and dependence could seriously undermine our food supply in an energy crunch or shortage.

The trend towards convenience seems to underlie our energy and resource abuse:

* Highly processed foods use much more energy than less processed foods. Fresh fruits and vegetables, for example, often require half the energy for production, processing and preparation as frozen varieties.

* Convenience gadgets--from the electric can opener to the dishwasher--replace human energy with environmentally-expensive energy.

* Excessive packaging and nonreturnable containers use resources--paper (from wood), plastic (from petroleum), metal (from steel, tin, aluminum) and much energy in production. Bulk sales and returnable containers have been shunned for the convenience of both retailer and consumer, thus multiplying resource consumption. Packaging litter is an eyesore, cleanup is costly; solid waste is a serious and expensive cost borne by the public.

A few changes in our food system could save large amounts of energy and resources:

* Emphasis on regional self-sufficiency in agriculture to save fuel used in transport and storage;

* Increased use of manure and crop rotation systems to supplement or replace chemical fertilizers;

* Less processing of foods;

* Less packaging of foods.

Our food system has grown fat and wasteful. Industry, in pursuit of productivity and profit, has shown little interest in maintaining a balanced, productive environment; government has shared this narrow vision. Yet it is not necessary to pawn the earth's health and productivity for our daily TV dinner. A shift in agricultural and food processing technology, with new emphasis on energy conservation, resource conservation, and recycling of materials can reinforce the earth's ability to sustain and regenerate itself. We can guarantee not only enough food today, but enough food tomorrow and for future generations.

Activity Nine

Pesticide Use

OBJECTIVE: To research use and problems related to pesticides.

BACKGROUND INFORMATION: Lerza, Catherine: "Emptying the Cornucopia"; Nelson, Bryce: "Big Farms Try Kicking the Chemical Habit"; Zwerdling, Daniel: "The New Pesticide Threat"; FFPNFP. Groth, Edward: "Increasing the Harvest," Environment, Vol. 17, No. 1.

RESOURCES: Local environmental groups, farm organizations, cooperative extension, State Department of Agriculture.

PROCEDURE:

1. Have students identify individuals and interest groups concerned with pesticide use in agriculture. (EXAMPLES: Farmers (both those using conventional and organic methods), farmworkers, government environmental officials, representatives of local environmental or consumer groups, department of fisheries and wildlife, cooperative extension, department of public health.
2. Have class brainstorm a questionnaire. (SAMPLE QUESTIONS: What are the advantages and disadvantages of chemical pesticides? Biological pest control? What

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affect would reduction of pesticides have on crop yields? Do pesticides cause death or illness to farmworkers in the community? to other citizens? to wildlife? What laws does the community have regulating pesticide use? How vulnerable are local crops to pests? Which crops are most vulnerable? Has serious disease or blight affected local crops in recent years? Is information available on organic pest control methods? Can these methods replace chemical pesticides? What are your recommendations regarding environmental and health problems associated with pesticides?) Not all questions will be relevant to all respondents.

3. Have a group of students compose a cover letter, explaining the class project. Mail questionnaires and letter to selected individuals, departments and groups. If possible, have students call persons who will receive questionnaire, explaining the project and requesting prompt cooperation.
4. Have a group of students call or visit local cooperative extension. What literature and information is disseminated on conservation of pesticides? On biological pest control?
5. Have another group visit local supermarkets. Do they provide clearly labeled organic food for those consumers who desire it? Have any state laws been proposed defining and regulating the labeling of organic foods?
6. Have a group of students handle returned questionnaires. Interpret and analyze results.
7. Plan a class meeting with group reports on research results. Discuss policy implications following from the findings.
8. Invite interested questionnaire respondents to a discussion of findings. Based on the class research, what policies are appropriate for the community?
9. Form an action committee of interested students. Have them write an article discussing pesticide problems and solutions in the community. Encourage them to work with local environmental groups concerned with pesticides or other food-related environmental issues.

Activity Ten

Energy and Food

OBJECTIVE: To assess energy use in the food system. To establish guidelines for low-energy eating.

BACKGROUND INFORMATION: Fritsch, Albert, Linda Dujack and Doug Jimerson: Food and Energy (available from CEP, 1413 K Street, N.W., Washington, D.C. 20005; Steinhart, J.S. and C.E.: "Energy Use in the U.S. Food System," Science, April 19, 1974; Pimentel, et. al.: "Food Production and the Energy Crisis," Science, November 2, 1973.

MATERIALS: "Petroleum Palace Menu."

PROCEDURE:

1. INTRODUCTORY REMARKS: The American food industry is highly productive but this productivity depends on large quantities of energy to produce, process, trans-

port, store and prepare many foods. Environmentalists have expressed much concern about this energy dependence recently and the United States now seeks to halt wasteful use of non-renewable energy.

You have all been invited out for lunch at a very special restaurant. It is called "Petroleum Palace" and its unusual feature is that prices are based on the amount of energy used for each food. The owner of the restaurant is a serious environmentalist, and she is concerned about the need to conserve energy in this country. In order to do her part she charges a great deal for foods requiring much energy to grow and process, and lower prices for food using less energy. She is so concerned that Americans understand energy used in food production that she offers a discount to any patron who explains why one food is "energy-cheaper" than another. We won't be able to eat at the "Petroleum Palace" but I'll pass out menus and allow you to choose the food you would order there. For this meal, I want you to base your selection not on what you like the best or on nutrition, but on energy conservation.

2. Distribute menus. Give the students time to make their orders. Encourage them to write a line or two (no more) explaining each choice.
3. Read the costs per item, and instruct students to record these on their order. Allow students to add up their bill and place the amount in space labeled "Subtotal."
4. Have class discuss the energy differences between foods in each course of the meal. Students should take a 10¢ discount for every correct explanation they make.
5. Enter the amount of discount in the space labeled "Discount." Subtract the discount from the subtotal to determine the TOTAL BILL.
6. Distribute copies or display transparency of "Food-Energy Chart" (Food and Energy, pp. 62-71) and "Suggestions for Reducing Energy Consumption" as discussion aids.

   DISCUSSION SUGGESTIONS:
   * The consequences of high energy use in the food system
   * Eating an energy-cheap, but healthy and nutritious diet
   * Options for farmers, food manufacturers, grocers and cooks who want to provide energy-cheap, but healthy and nutritious foods for consumers
   * Forces encouraging us to eat an energy-intensive diet
   * Forces restraining the food industry from providing energy-cheap foods (this would make a good brainstorm)

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MENU

APPETIZERS: CHOOSE ONE FROM EACH PAIR.

* Fresh Juice or Frozen Juice ______
* Cracker A (unwrapped, available to the store in bulk), OR
  Cracker B (wrapped individually, packed in small cartons) ______
* Butter or Margarine ______

MAIN DISH: PLEASE MAKE A FIRST AND SECOND CHOICE AS WE DO NOT ALWAYS CARRY EACH ENTREE:

* Luncheon Meat ______
* Chicken ______
* Turkey ______
* Rice and Vegetables ______
* Beef (Grass-Fed) ______
* Beef (Grain-Fed) ______

VEGETABLE: SORRY, TODAY WE HAVE ONLY CARROTS, BUT YOU MAY CHOOSE YOUR PREFERRED TYPE:

* Fresh Carrots ______
* Dehydrated Carrots ______
* Frozen Carrots ______
* Canned Carrots ______

DRINKS: PLEASE CHOOSE A FIRST AND SECOND CHOICE AS WE SOMETIMES RUN SHORT OF ONE KIND OF DRINK AT LUNCH:

* Soft Drink (in aluminum can) ______
* Soft Drink (in returnable glass bottle) ______
* Milk ______
* Beer (in aluminum can) ______
* Beer (in returnable glass bottle) ______
* Juice (in aluminum can) ______

DESSERT: CHOOSE ONE.

* Apples (homegrown in our restaurant's own garden, ____
  OR store bought) ____
  Walnuts (shelled OR unshelled) ____ ______
* Ice Cream ______

SUBTOTAL ______

DISCOUNT ______

TOTAL BILL ______

PRICE LIST AND EXPLANATIONS FOR FOOD SOLD AT PETROLEUM PALACE:

(Prices are proportional to actual energy expenditure)

APPETIZERS:

* Canned Juice: 12¢ Frozen Juice: 46¢
  (Freezing and processing use a great deal of energy, both initially and for storage)
* Cracker A: 10¢ Cracker B: 15¢
  (Food excessively packaged or only available in small packages is more energy-intensive than unwrapped foods or foods available in bulk)
* Butter: 15¢ Margarine: 5¢

MAIN DISH:

* Luncheon Meat: $1.60 * Rice and Vegetables: $ .45
* Chicken: .96 * Beef (Grass-Fed): 1.48
* Turkey: 1.06 * Beef (Grain-Fed): 2.08

(Animals are inefficient converters of protein. A pound of meat requires about four times the energy to produce and market as a pound of vegetable protein. Some animals are more efficient converters of protein than others.)

VEGETABLE:

* Fresh Carrots: 12¢ * Frozen Carrots: 31¢
* Dehydrated Carrots: 92¢ * Canned Carrots: 23¢

(Processed vegetables require more energy than fresh vegetables; freezing and dehydration especially require large amounts of energy.)

DRINKS:

* Soft Drink (aluminum can): 45¢ * Beer (aluminum can): 50¢
* Soft Drink (returnable bottle): 31 ¢ * Beer (returnable bottle): 25¢
* Milk: 34¢ * Juice (bottle) : 12¢

(Aluminum cans require a great deal of energy to mine and manufacture; non-returnable containers use much more energy than returnable concontainers which can be reused approximately 15 times.)

DESSERT:

* Homegrown apple: 3¢ * Store-bought apple: 19¢
  (Homegrown apple by commercial methods saves commerce and transport; organic methods would save more.)
* Walnuts, shelled: $1.04 * Walnuts, unshelled: 39¢
  (Another cost of processing.)
* Ice Cream: 60¢
  (Large quantities of milk are used; freezing is necessary.)

SUGGESTIONS FOR REDUCING ENERGY CONSUMPTION

Several options reduce energy consumption while maintaining good nutrition.

A. Increased home gardening and fruit growing

Growing fresh produce at home would eliminate energy used in commerce and freight. Using commercial methods at home results in savings:

	Home grown (Btu/lb)	Supermarket and grocery store (Btu/lb)
White potatoes	2,850	6,250
Green peas	7,450	10,900
Lettuce	1,750	5,200
Carrots	1,300	4,750
Apples	917	5,950
Peaches	1,078	6,100

Non-commercial practices, such as hand-spading, organic fertilizer and biological versus chemical pesticides would provide still more energy savings.

B. Shift to vegetable from animal protein

A pound of meat protein requires about four times as much energy as a pound of plant protein. A great variety of plant proteins such as whole wheat bread, whole wheat macaroni or legumes could be used in cooking in place of meat dishes. The beef that is consumed should be forage-fed, not grain-fed, varieties.

C. Reduce use of over-processed foods, especially frozen specialties

Generally, processed vegetables and fruits use far more energy than non-processed ones. Canning, though, can save otherwise wasted materials. One should strive to eliminate frozen specialty foods from the weekly grocery purchases. A TV dinner, with packaging, uses 36,000 Btu, far more than if the individual items were cooked from basic ingredients.

	Fresh Produce	Canned	Frozen	Dehydrated
	(all in Btu/lb)			
Corn	5,250	10,300	12,750	37,100
Carrots	4,750	9,200	12,750	37,100
Peas	10,900	14,250	12,750	37,100
Apples	5,950	4,000	9,200	23,200
Potatoes	6,250	9,000	14,950	26,700

D. Avoiding non-returnable beverage containers

A study by Bruce M. Hannon reveals that the 1970 container system energy could be reduced by 40% if the beverage industries were converted entirely to returnable containers. The returnable glass bottle averages fifteen trips. One must allow amortization of the energy expenditure over the lifetime of the container.

E. Increased purchase of bulk and packaged foods

Packaging is not only a heavy energy expense for beverages but also for solid foods. Smaller containers require more packaging material than larger containers. Coopera-stores which encourage shoppers to bring their own containers are needed.

(Derived from Food and Energy)

Activity Eleven

Types of Food Packaging

OBJECTIVES: To identify types of food packaging. To determine environmental problems associated with packaging. To develop criteria for distinguishing between functional packaging and wasteful packaging.

BACKGROUND INFORMATION: Taylor, Patricia: "Packaging: The Costs Add Up," FFPNFP.

MATERIALS: Three grocery bags full of food packages. (Select a variety of materials and types of packages.)

PROCEDURE:

1. Introductory remarks: Both the type and the amount of packaging used for our food is a major environmental concern. Between 1958 and 1971 per capita consumption of packaging increased 43% from 412 lbs. per year to 591 lbs. per year. About one-third or more of the waste generated by businesses and households is packaging wastes. Much of this is food packaging.

   Why all the packaging? Large food companies sell more and more to wide geographic markets. For ease of shipping and marketing over long distances, foods formerly sold loose are now packaged, and other foods are enclosed in an endless array of envelopes, bags and boxes within still larger boxes and cartons. For purposes of shipping and display, oranges and apples are placed in styrofoam boxes with plastic covers; cream cheese is wrapped in foil, then enclosed in another box. Elaborate display packaging is an important sales technique in self-service markets. Frozen foods use large amounts of packaging.

   Not only the amount but the type of packaging has changed. Businesses operating over great distances and supermarkets trying to cut down on labor have turned to non-returnable packaging. Metals such as aluminum--costly for consumers and the environment--are used where substitutes exist. Excessive packaging wastès energy resources. Aerosol containers are especially wasteful. Towns and cities throughout the nation face serious disposal problems for their solid waste. The question becomes more and more pressing: Do we need all this packaging?

2. Divide class into three groups. Provide a bag full of food packaging for each group.

3. Have students group similar packaging into piles, according to some classification system.

4. Have students discuss their grouping with other members of the class: DISCUSS: What information did your package grouping give you? For what purposes is this information helpful? What other ways of grouping can you think of?

5. Possible methods of grouping are:
   - * BY MATERIALS (Glass, aluminum, steel, plastic, paper)
   - * BIODEGRADABLE OR NOT
   - * TYPE OF FOOD PACKAGE WAS USED FOR
   - * NECESSARY OR WASTEFUL PACKAGING
   - * KIND OF PACKAGE (Box, bottle, can cardboard)

* PURPOSE OF PACKAGING (Protection, advertising, convenience, sanitation, none)

If some of these groupings haven't been used, give students time to regroup their packages, and discuss.

6. Have each student list the five most reasonable packages. Why? The five worst packages? Why? Compile a master list. Have class brainstorm guidelines for good and bad packaging.
7. Have students send guidelines to manufacturers of products judged to be worst. Ask why their firm continues to use wasteful packaging and make clear your opinion on such waste.
8. Have students weigh the containers and use formulae in Food and Energy (see previous activity) to find energy content of food packages.

Activity Twelve

Food Packaging Problems in the Community

OBJECTIVE: To investigate problems created by excessive food packaging.

BACKGROUND INFORMATION: Taylor, Patricia: "Packaging: The Costs Add Up," FFPNFP; U.S. Environmental Protection Agency Second Report to Congress: Resource Conservation and Source Reduction (Publication #SW122--available from Superintendent of Documents, Government Printing Office, Washington, D.C. 20402, $1.60.)

RESOURCES: Local environmental and consumer groups.

PROCEDURE:

1. Two community investigations:

   A. RETURNABLE VS. NON-RETURNABLE BEVERAGE CONTAINERS: A major packaging problem is the increased use of non-returnable beverage containers. More energy and raw materials are required to make containers for one-time use rather than returnable containers which are refilled on the average of fifteen times each. Beverages sold in non-returnable containers cost more than beverages sold in returnables. Disposing of these containers is a serious litter and solid waste problem, which is greatly magnified by the use of non-returnables.

   Despite all the advantages of returnables, most stores stock only non-returnables, or a very limited selection of returnables, in the name of convenience!

Some cities and states have passed legislation which bans sale of non-returnable containers or encourages sale of returnables by requiring a deposit on all beverage containers. What is the situation in your community?

a. Have class identify which individuals and special interest groups in the community are especially concerned about this issue (retailers, soda pop and beer manufacturers and bottlers, ecology groups, consumers, consumer groups, solid waste officials, city council persons).

b. Divide class into small groups. Have groups interview the individuals and special interest groups identified above concerning bottle legislation. Students should determine if the person interviewed supports legislation. Why or why not?

c. Have one group find out if bottle legislation has been introduced on the city or state level. What is the status of the legislation? Who supports it? Who opposes it? Why?

d. One or two groups of students should survey area stores to determine how many offer beverages in returnable containers. If returnables are available, is there a variety of choices? Compare prices of returnable and non-returnable beverages.

e. Have class compile results of interviews, price survey, and legislation research. Report results to local newspapers and government officials. Prepare a fact sheet for consumers and distribute at stores.

f. Interested students should volunteer to work with local consumer and ecology groups to promote returnable bottle and other legislation.

B. PACKAGING IN FAST FOOD RESTAURANTS: Fast-food restaurants have been criticized for their excessive use of packaging. Surveying the tray after eating at McDonald's, Gino's, Burger King or Kentucky Fried Chicken, it's often difficult to determine where the food fit between all the paper, cardboard, and plastic which remain! Do you think restaurants in your community overuse packaging?

a. Divide students into groups of four or five.

b. Have each group choose a fast food restaurant to study.

c. Have students survey packaging used. Which packaging is necessary? Which is excessive? Are foods packaged differently for eating in the restaurant and for carry-out?

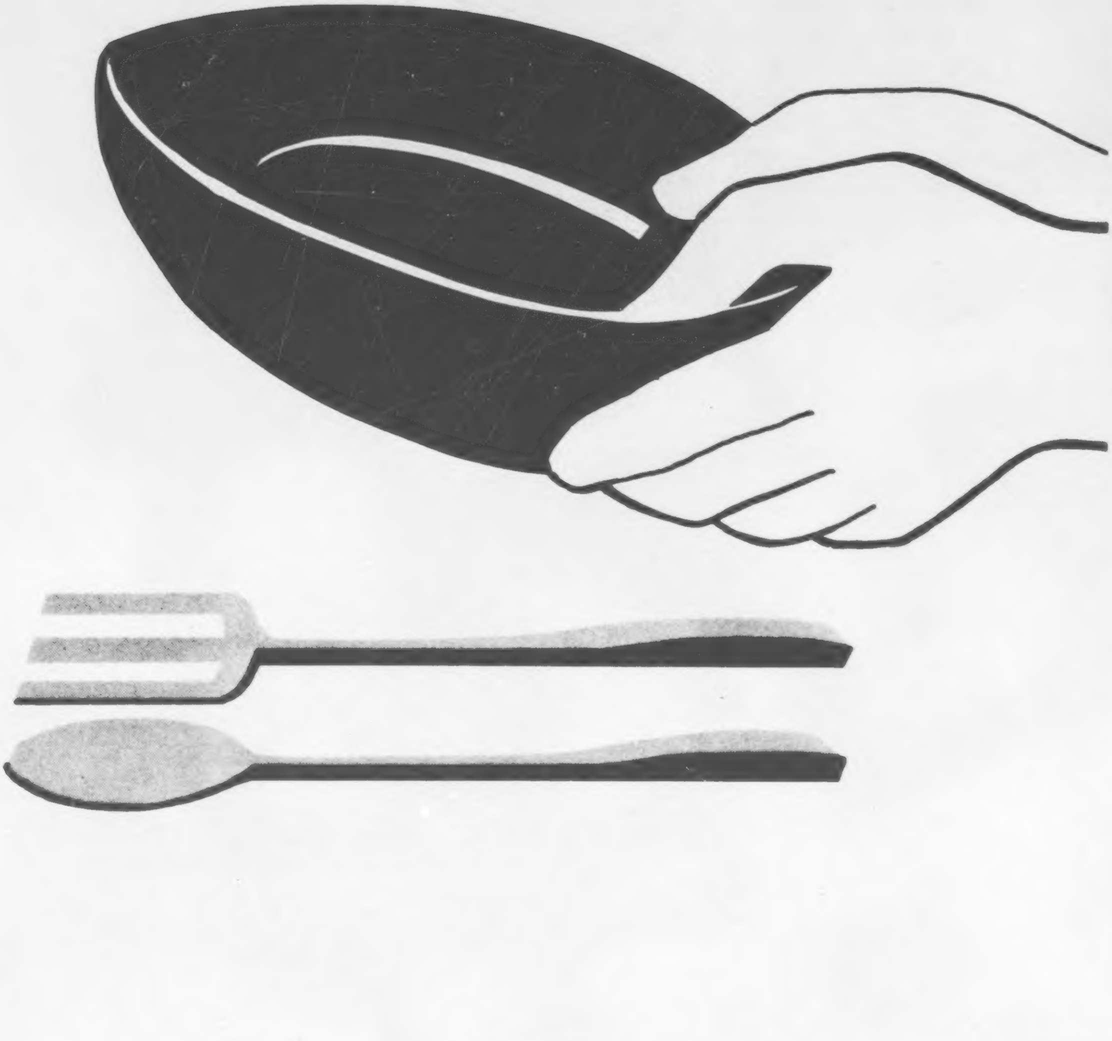
d. Ask groups to decide on a standard meal offered in all of the restaurants and record the packaging used for it. Ask the store manager how many orders of each food item are sold each day, week, month or year. Figure out how much paper, cardboard, metal and plastic is used just for these items. Write the national headquarters of the chain and determine how many servings of these foods are served nationwide. Calculate the amount of materials used for the standard meal nationwide.

e. DISCUSS: Who pays for the food packaging in the restaurant? Who pays for the disposal of food packaging?

f. Identify the fast food restaurant which wastes the most packaging in your town. Award it the "First Annual (YOUR SCHOOL) Litterbug Award." Write a press release announcing the award for area newspapers. Organize a "trash-in" at the restaurant and invite the press.

6.

HUNGER IN THE UNITED STATES



Hunger in the United States

Poverty in our society is a double-edged sword: the physical hardships of poor diet, illness, poor housing, inadequate clothing, poor community facilities are on one side, and the psychological misery of poverty when wealth is a symbol of success on the other.

Federal government figures indicate that about 26 million people fall at or below the federally defined poverty line (set at $5,040 per year for a family of four in 1975). Critics allege that the figures used to define poverty, though, are highly questionable, based on political expediency rather than need. Forty to fifty million Americans, about 20-25% of the population, are probably in need of food, better housing, health care, and other essential goods and services. Children from broken homes, their guardians, the disabled, the blind, the elderly, the unemployed, and the underemployed comprise the majority of the poor. Of about 16 million people receiving public assistance, more than half are children. Many observers believe that the lot of the poor is worsening and predict that some of the middle class will find themselves among the needy.

As unemployment remains high, and some experts expect that "things will get worse before they get better," it is important to look at hunger and poverty in America, to examine what is being done, and to decide whether current government efforts are adequate.

Many of the poor cannot afford the necessities of life, including an adequate diet. Inadequate diet contributes to poor health; it is not healthy to be poor. Health indicators such as chronic conditions, average number of bed disability days, and work loss days per person are inversely related to income. The activities of approximately 18 percent of persons earning less than $3,000 a year are limited by chronic conditions. This percentage declines steadily as income increases; only 7.8 percent in the highest income ($15,000) class are similarly affected by chronic disease. In fact, the differences are probably understated since low-income persons more frequently hold jobs that do not allow sick leave; they may be forced to work when ill rather than lose a day's pay. For the poor, to be sick is to be incapacitated. Poor people often ignore or tolerate symptoms, even very serious ones, until disability forces them to stop working. Available, affordable medical care may be inadequate and too late.

The Ten-State Nutrition Survey is among the best, most comprehensive "official" data currently available on the extent of malnutrition in the United States. The study was conducted in 1968-70 by the U.S. Department of Health, Education and Welfare. Examinations of 40,000 poor people and demographic data on 24,000 low-income families in ten states (five low income states and five high income states) "showed that high percentages of the survey sample were either malnourished or else at high risk of developing nutritional problems."

* Evidence of malnutrition was most commonly found among blacks, next among Spanish-Americans and least among white persons. Generally there was increasing evidence of malnutrition as income level decreased.

* Adolescents and the elderly showed relatively frequent nutritional deficiencies.

* Obesity among women, subnormal weight and height among children and adolescents, poor dental health, anemia and vitamin C deficiencies were common nutritional problems among the poor.

Infant mortality during the first month of life is one and one-half times greater among poor than the middle class. More and more evidence is accumulating that the same conditions that cause death of infants before, during or soon after birth, also lead to chronic illness and handicaps for those who survive.

The significant variables are poverty and malnutrition. A New York study found that babies of poor women were 15 percent smaller than those born of non-poor mothers from the same geographic location and ethnic background. Small babies have difficulty thriving, are usually slower in development, and are more prone to illness than normal weight babies. The low weight infants also had anatomical defects attributed to malnutrition. According to a recent study, more than a million American infants and young children have brain damage or are at a risk.

A hungry child is also an educational risk. A poorly fed child may lose learning potential, and suffer from poor growth, hyperactivity, greater susceptibility to infection, and therefore, greater absenteeism from school. Children with iron deficiency anemia are more easily distracted than those who consume adequate amounts of iron. This results in poorer performance in school and limited opportunities later.

Malnutrition may haunt the poor throughout life. The jobs of the working poor often require much energy--manual labor and service-type jobs, for instance--and therefore require large amounts of nutritious food. Some studies have shown that inadequate food intake among workers results in reduced productivity, and that prolonged undernutrition creates feelings of social alienation. The nutrition problems common to certain age groups, such as pregnant women and the elderly, are far more severe among the poor than among higher income groups.

The poor frequently end up paying more for lower quality food than the middle class. There are several reasons for this:

* Food prices are higher in ghetto and inner city neighborhoods. Few chain supermarkets locate in these areas, and food is generally purchased at independent stores that must charge higher prices because of lower volume. Small, inner-city stores with limited storage space also have higher transportation and labor costs because food must be delivered relatively frequently.

* Due to inadequate housing and poor storage and refrigeration facilities, the poor must often purchase food on a daily basis. This takes more time and may prevent the poor from taking advantage of bargains.

* Inflationary rises in food costs affect the poor more than other Americans, because the poor spend a much greater percentage of their income on food. Moreover, the rich and middle class are able to change their food habits and "spend down" to cheaper products. The poor in most cases are already eating the cheapest food items and cannot "spend down." The increased demand for the least expensive foods drives up their prices, further hurting the poor.

* Studies by welfare organizations and others show that the quality of food available in the inner cities is inferior.

* Inadequate cooking facilities, limited space, and poor sanitation make food preparation, cooking and serving difficult.

The selection of a nutritious diet on a tight budget is a difficult task. Nutrition confusion abounds, because most food industry advertising glamorizes unwholesome food habits. These messages are unfair to all consumers, but they place a special burden on the poor who must spend limited food dollars very carefully to provide an adequate diet.

Despite the hardships that the poor must endure, a 1974 USDA Economic Research Service study showed that low-income families get more nutrients for each food dollar than do higher-income families.

Food Programs

The U.S. Government funds several food programs designed to supplement the diets of the needy. Federal spending on nutrition programs has greatly increased in recent years. Total spending for the federal food programs rose from 1.6 billion in fiscal 1970 to about 6.2 billion in fiscal 1975. Although food programs appear mammoth to many, they actually constitute about 2.3 percent of the annual federal budget. This relatively small amount reaches some of the very needy, and very few of those less in need. Fifty-eight percent of four-person households with incomes under $3,000 a year receive food stamps, while only 1.3 percent of households in the $7,000-7,900 and .2 percent of four-person households in the $9,000-9,999 range receive food stamp aid. During a 1973 hearing of the Senate Select Committee on Nutrition and Human Needs, former Assistant Secretary of Agriculture Clayton K. Yeutter testified that the program is "remarkably free of fraud." A 1974 USDA report found that only 8 out of 10,000 participating families, or .08 percent of the test sample receiving food stamps, obtained them fraudulently.

At the same time that national efforts to aid the poor have increased, the economy has played havoc with the lives of the poor. Inflation and unemployment have undermined the ability of the poor to provide themselves with basic needs of food, clothing, shelter and medical care. Food programs provide some relief for some of the poor. These programs are a good investment, because they prevent malnutrition and increase productivity and opportunity for many citizens.

The Food Stamp Program

Food stamps are coupons that eligible households can buy at a discount rate and then spend as cash at grocery stores. The food stamp allotment for each household is based on its size and income. The amount the household pays for food stamps is determined by its income after certain deductions for regular expenses such as medical bills, rent and utilities. For instance, a family of four with an income of $310 per month after deductions pays $89 for food stamps worth $166.

Food stamps may be spent at any grocery store, supermarket or food co-op that accepts them. Most stores accept food stamps, because the purchases increase their sales and are accepted as cash by the bank. Food stamps can be used to buy any food (except pet food) and even seeds or plants to produce food. Food stamps can also pay for home delivered meals ("meals on wheels") and group meals for the elderly ("Nutrition Program for the Elderly"). Food stamp users cannot buy non-food items such as alcohol, tobacco, soap, and paper products with their stamps.

The U.S. Department of Agriculture administers the Food Stamp Program. The program operates under the same laws throughout the country. The rights of food stamp participants are protected by strong federal laws. These rights include:

- the right to a quick decision on a family's application for food stamps
- the right to receive food stamps as soon as a family moves into a new area
- the right to a fair hearing if the household disagrees with a decision of the local food stamp office

The food stamp users also deserve to be treated with respect at the food stamp office and grocery stores, but this human right is sometimes abused.

State food stamp offices prepare yearly plans for operating the program in their cities and counties. Local social services departments or food stamp offices then certify people for the programs. Every county must have such an office. Stamps are available to certified households at banks, post offices or local food stamp offices, depending on the willingness of such institutions to handle food stamp sales.

Congress was considering modifying the food stamp program in early 1976. Find out from USDA about any changes that may have been adopted.

School Lunch

The National School Lunch Program was started in 1946 by an act of Congress. That act, which is administered by USDA, authorizes money for school lunches for children. Every school lunch is a "welfare lunch," because the Federal Government subsidizes all school lunches. Regardless of a student's family income, the federal government pays 12.25¢ in cash plus an average of 11¢ in donated commodities for every school lunch served. States receive 54 1/2¢ more for each free lunch and 44 1/2¢ for each reduced price lunch (figures as of January 1976).

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*Profiles courtesy of Children's Foundation, Washington, D. C.

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All schools serving lunch are bound by law to offer a balanced, nutritious Type A lunch. Type A lunch must contain specified minimum quantities of milk, protein foods, vegetables and/or fruits, bread and butter or margarine. The lunch should meet one-third of the RDA of essential nutrients.

The law insures that needy children have the opportunity to receive a reduced cost or free lunch. With the rising cost of food, families with tight budgets can at least be assured of subsidized lunches for their children.

School Breakfast

The Child Nutrition Act of 1966 created the National School Breakfast Program. A pilot program was launched in poor areas and areas where children travel long distances. Later the program was expanded and made available to all schools. The breakfast program subsidizes free and reduced price breakfasts to children from families with low income. It also provides standard price breakfasts. No reduced price breakfast may cost more than 10¢.

Like the school lunch program, the breakfast program must conform to nutritional standards set by law. The guidelines intend that children who participate in both programs will receive two-thirds of their daily nutritional needs. Unlike the lunch program, which must be operated by educational institutions, the breakfast program may be run by a church or community action agency in some communities.

The Child Care Program (intended for day care centers, head start centers, etc.) and Summer Feeding Program provide cash and commodities to feed children not enrolled in school.

W.I.C.: The Special Supplemental Food Program for Women, Infants and Children

WIC is a special food program for pregnant women, nursing mothers, and children under the age of five who are eligible for free or reduced price medical care, and are at nutritional risk.

WIC is preventive nutrition, which is especially important for pregnant and nursing women. Malnutrition during pregnancy or the early developmental years can cause improper brain growth, mental retardation, prematurity, respiratory illnesses and stunting of growth in the baby. Malnutrition also increases the infant death rate.

Mothers and children over the age of one in the program receive monthly allotments of milk (or cheese), fruit juice and cereal. Babies receive iron fortified infant formula, infant juice and infant cereal. The food package is varied for medical reasons and cultural preferences.

WIC food is extra food. It won't cut down a mother's Food Stamp bonus or keep a toddler out of a day care meal program.

Federal Nutrition Programs for the Elderly

The Nutrition Program for the Elderly, Title VII of the Older Americans Act (P.L. 92-128), is designed to provide nutritious meals to older Americans, particularly those who live on a tight or fixed budget.

Group meals are held in various parts of the community convenient for participants. The sites must serve at least one meal a day, five days a week, although exceptions may be made in rural, sparsely populated areas.

Laws require centers to provide social services, recreational services, nutrition

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education and shopping assistance as well. Centers must also provide transportation to and from the center.

Who participates in federal food programs? Eligibility for most welfare programs and food programs is determined by the "poverty line" which is more a statistical tool than a standard of need. Because the poverty line is set unrealistically low ($5,040 for a family of four in 1975), eligibility for food, welfare and health services is highly restricted.

In the late 1960's the Bureau of Labor Statistics (BLS) of the U.S. Department of Labor developed a budget to be used by public assistance agencies as a "realistic benchmark" of need. It is a "conservative" estimate to provide for health care, social well being, and the raising of children. Since this BLS lower budget level is based on a standard of need and is not just a statistical tool, it is a more realistic guide for eligibility for health and welfare programs than an arbitrarily set "poverty line." Restricted eligibility and complex procedures have excluded many needy persons--especially the working poor--from important services.

Even those eligible don't participate in many federal programs. According to Robert Greenstein of the Washington, D.C.-based Community Nutrition Institute:

> Of the 4.6 million low-income pregnant and nursing women and low-income children up to age four in the country, fewer than 770,000 are reached by Federal food programs designed to prevent malnutrition during the critical first years of life. Only 1.5 million out of 10.9 million poor school children are reached by the school breakfast program, and two million poor or near-poor children still attend schools that do not even provide a school lunch. Only 360,000 of the more than 1.75 million low-income children in day care centers are served by the government's day care food program. Only 220,000 out of several million elderly poor are reached by a government program that provides one hot meal a day in a group setting.

In addition, only about 500,000 of the several million school children eligible for reduced price breakfasts now receive them. According to 1974 USDA figures only 35 percent of those eligible for food stamps receive them.

Why don't more people participate? The food stamp program may be cited as one example. Reasons for poor participation include the high cost of food stamps (as the program operated in early 1976, recipients must have the cash for the monthly allotment on hand), inadequate distribution outlets, inconvenient hours, transportation problems, inadequate outreach programs, complicated forms and procedures, and intimidating interrogation of applicants.

Not only does the food stamp program fail to reach many of the needy, but its provisions may fail to supply adequate amounts of nutritious foods for many recipients. Until 1975, the program had been based on the Economy Food Plan, USDA's cheapest food plan, theoretically intended only for emergency or temporary use. This food plan provided for a man and woman aged 20-35, a girl aged 6-9, and a boy aged 9-12, making no provision for pregnant adolescents, pregnant women and adolescents, who are at the highest nutritional risk.

In late 1975 a new Thrifty Food Plan replaced the Economy Food Plan. The average allotment for the plan is about the same as the Economy Food Plan. Families with small children and the elderly will have lower allotments than permitted under the Economy Food Plan, while families with teenagers and pregnant women will have increased allotments. Many authorities believe this plan still fails to meet human needs. The allotments are based on the cost of food in the previous six to twelve months, with no allowances made for inflation, regional price differences and very little for waste.

Private citizens and community action groups can organize to implement major changes in food and welfare programs on the local, state and federal levels. They can also closely monitor their own community, to insure that existing laws are faithfully carried out, and that efforts are made to widely publicize programs.

Some recommendations for concerned persons include:

* Advocate that current health and welfare programs be made more accessible to the working poor by measuring eligibility after taxes, not before. Services should be available at convenient hours and locations for the working poor.

* Work for better publicity of food programs so that the maximum number of needy persons receives the optimal benefits. Communities should consider establishing a hunger task force to do the following:

  - Start a food stamp campaign to reach the working poor and the elderly. Encourage public assistance recipients to use the checkoff system to deduct food stamp payments from the welfare check if food stamps are not readily available; the stamps are then delivered with the welfare check.
  - Promote school food service programs for needy children by verifying that each school has a program for free and reduced-price lunches and breakfasts.
  - Encourage the elderly to participate in the Title VII of the Older Americans Act feeding program (group feeding); expand the program.
  - Promote Supplemental Security Income (SSI) for the elderly.
  - If the need exists, set up a Woman, Infant, and Children's (WIC) feeding program.
  - Provide free food for the poor.

These important efforts can improve and expand food programs. But longer range vision is also needed. Federal food programs have not solved the problem of malnutrition in the United States. Despite incremental improvements in present food and welfare programs, these programs will continue to be an inadequate response to hunger, poverty and malnutrition, and to the underlying problem of maldistribution of wealth and power in this country.

According to a 1974 report issued by a panel assembled by the Senate Select Committee on Nutrition and Human Needs, the fundamental issue

> is not so much the mechanics of the food assistance programs as it is the fact of persistent poverty, and the continued tolerance in this country of a starkly inequitable distribution of income. In a nation in which the wealthiest one percent possesses more than eight times the wealth of the bottom 50 percent, in which the percentage of national income going to the lowest fifth of the population has remained the same for 45 years, and in which 40 million people remain poor or near-poor, more than a food stamp or child-feeding program is at issue.

Those concerned with eliminating hunger and malnutrition in the United States need to focus not only on the inadequacy of food and welfare programs, but the basic inequalities of a system that allows poverty to continue in the midst of plenty.

Activity One

Hunger and Poverty: A Values Continuum

OBJECTIVE: To determine personal values and attitudes concerning hunger and poverty in the United States.

PROCEDURE:

1. INTRODUCTORY COMMENTS: Poverty and hunger have been serious problems throughout history. Much disagreement exists on the causes of and remedies for poverty and hunger. The purpose of this activity is to explore the range of viewpoints concerning hunger and poverty in the United States. Each student will explore his or her own personal values concerning these problems.
2. Draw a line on the board and mark "I strongly agree" on one end and "I strongly disagree" on the other. This will represent a continuum of opinions. Explain to students that you will read aloud several strong statements on hunger and poverty. After each statement ask volunteers to tell where they lie on the continuum from strongly agree to strongly disagree.
3. SUGGESTED STATEMENTS:
    - Most Americans, even the poor, have adequate food for a well-balanced diet.
    - Everyone should be guaranteed adequate food.
    - I am concerned about the poor in my community.
    - If people are hungry, it's probably because they're wasting their money on other things.
    - The government should have more effective food programs to help the poor.
    - The major cause of hunger in the United States is poverty.
    - My own actions don't affect how much the poor get to eat.
    - I would give away some of my own food to a hungry person.
    - There is enough food for everyone but political and economic policies prevent fair distribution.
    - Hunger and poverty are due to laziness and lack of ambition.
    - Hunger and poverty will always exist.
    - The presence of hunger and poverty in America indicates serious shortcomings in our national priorities.
    - Hunger can limit people's ability to learn and be productive.
    - Government should subsidize and encourage co-operative food stores, community gardening and canning centers, and other low-cost food opportunities for those in need.
    - Hunger doesn't exist in my town.
    - I don't think I'll ever be hungry.
4. Encourage all students in the class to express their opinion on at least one of the statements.
5. Allow some time at the end of the activity for general discussion. Which statement was there most agreement on? Which statements were most controversial? Why? What facts would be helpful to know in order to take positions on the statements? How could students find out these facts? How did students feel about openly expressing their opinions on poverty and hunger? What new thoughts or questions do students have resulting from this activity?

Activity Two

Investigating Hunger in the Community

OBJECTIVE: To investigate hunger and poverty in the community; to determine adequacy of welfare payments and food programs available in the community.

BACKGROUND INFORMATION: "Food and the Poor" (entire section), FFPNFP.

RESOURCES: Food Research and Action Center, 25 West 43rd Street, New York, New York 10036; Children's Foundation, 1028 Connecticut Avenue, NW, Washington, D.C. 20036; local consumer and anti-poverty groups.

PROCEDURE:

1. Divide class into four committees:

   * Welfare Payments
   * Social and economic characteristics of the community
   * Who are the needy?
   * Food Programs

2. Suggested actions:

   A. Welfare Payment Committee

   * Contact the State or local Welfare Department and find out:

     (1) What is the State's standard of need?
     (2) What is the actual welfare payment?
     (3) How many people are receiving assistance?
     (4) Breakdown of categories--Aid to Families with Dependent Children (AFDC) etc.
     (5) What are the eligibility requirements?
     (6) Does the State have a "man in the house law"? (Such laws restrict payments to homes without an adult male.)

   * Contact the State Social Security Office:

     (1) How many are receiving Supplement Security Income funds?
     (2) How many are eligible?
     (3) What are the eligibility requirements?

   * Contact the local housing authority:

     (1) How many families and individuals are living in subsidized housing?
     (2) How many are on the waiting list?
     (3) What are the eligibility requirements?

   * Contact local health department:

     (1) How many families are using the Health Department services?
     (2) What types of services are available?
     (3) For whom in the community are services available?
     (4) What are the eligibility requirements?

- * Have the committee work in a team to collect the above information. Not all the information will be available. Report findings back to the committee; also, problems, difficulties, attitudes, ideas and support received in collecting the information.

- * Calculate how much money is available to AFDC recipients for rent, utilities, clothing, non-food items, and transportation; subtract the total from the welfare payment--the remainder is for food. Try to get a realistic rent figure; find out where low rentals are and come up with an average rent. The following is an example for a family of four:

AFDC Grant for 4-person family			$ 270.00
Rent - based on a survey	$ 160.00		
State Standard Utilities	20.00		
State Standard Clothing	20.00		
State Standard non-food items	20.00		
			220.00
Difference = Food allowance for 4 persons/30 days			50.00
Amount per day/person	$\frac{\$ 50.00}{120}$	=	.42
Amount per meal/person	$\frac{\$ 50.00}{360}$	=	.14

B. Social and Economic Characteristics of the Community Committee

- * Contact local and/or state governments--Economic Development Department/ Social Statistics Department/ League of Women Voters, or any group that would have the following data (possibly the Chamber of Commerce):

  (1) Population--number of persons; number of households
  (2) Percent, and number of persons below the poverty lines; or below 125%, 150%, 175%, 200% of the poverty line. (Persons below 200% may be in need.)
  (3) Median and average income of the area.
  (4) Median cost of a home; median rent.
  (5) Low rents for 4-person family--percent available. (Contact local housing authority.)
  (6) Number and percent of households with means above $15,000.
  (7) Average size of households below poverty line, and below 200% of poverty.
  (8) Chart the above information for class presentation.
  (9) DISCUSS: How does it feel to be poor when most people in the community are comfortable or wealthy? How does it feel to be poor when most neighbors are poor? Is there a significant difference between the two situations?
  (10) If possible obtain national statistics and compare to your community.

C. "Who are the Needy?" Committee

- * Contact local welfare department for a statistical breakdown on the following:

  (1) How many and what categories of persons receive welfare? Aid to Families with Dependent Children (AFDC)? Supplemental Income (SSI)? Food Stamp Public Assistance and non-public assistance? Medical Assistance? (Information may be gathered with the cooperation of the Welfare Payment Committee.)
  (2) Estimate how many people are actually eligible for these programs. Use census data, anti-hunger group data, volunteer groups working on poverty, Community Action Committee data, data from Food Research Action Center (FRAC), and Children's Foundation.

(3) Contact the local employment office and agencies to find out how many people are looking for jobs.

(4) Contact institutions with a number of Service workers such as hospitals, nursing homes, supportive service staff in the school, to find out starting wages or salaries and benefits, and deductions. How much disposable income is available for the workers?

(5) Contact relief organizations to see how many people are requesting assistance, especially food. Ask why the government agencies are not meeting the needs of such people.

(6) Have some of the students visit these organizations and report back their experiences.

(7) Have the committee prepare charts on who is needy and make a map of where they live in the community.

D. Food Programs Committee

* Have the committee investigate what food programs are available for persons in need.

(1) Where are they located? Are they publicized? What are the eligibility requirements? What are the benefits? Food Stamps; Free or Reduced Price Meals at School; Women, Infants and Children's Supplemental Feeding Program (WIC); Title VII; Congregate Feeding Program for the Elderly; Emergency Food; etc.

(2) Have two students go to the site of each program and observe. Use their observations for a role play. Obtain application forms and have students simulate applying for each program. Include trying to find the location, transportation problems, waiting time, filling in application forms, items necessary for certification, interviewers' attitudes, time required to receive benefits, etc.

(3) Have the students calculate the current recommended cost for an adequate diet. Use the USDA low-cost food plan. Adjust for inflation. (Check the Family Economic Review, issued quarterly by the Agricultural Research Service, USDA, Washington, D.C.) Compare the recommended amount with the actual benefits.

(4) Have the students draw up one week's menus and shopping list on the food stamp allotments for a family of four.

3. Have each committee prepare a report and present it to the class. In addition, have each group discuss what poverty means to them. Invite to the class policy-makers, community activists and other community members interested in the problems of the poor.

4. Form an action committee of interested students from the four committees. Invite participation of local resource persons, persons in agencies, elected officials, activists involved in programs for the poor and clergy. Based on findings, have committee draw up recommendations for change. Indicate how students may participate. Some suggestions:

* Students may help expand the outreach of food programs by leafleting areas where need is high and participation low.

* Useful nutrition education is rarely provided food stamp recipients. The committee may draw up leaflets on good buys and rip-offs for distribution with food stamps or at the supermarket. It is difficult to obtain an adequate diet on the food stamp allowance. The information presented should emphasize that since the allotment is low, careful purchasing is essential in order to get the best food value for optimal health and social well being.

* Actions should be based on the needs determined by research or investigation. If local organizations are working on the same issues, the students may volunteer

their time and efforts. Write letters to legislators and testify at hearings on food programs and poverty.

Activity Three

Shopping and Cooking on a Poverty Budget

OBJECTIVE: To understand the effect of poverty on diet. To assess the adequacy of welfare payments or food stamp allowance.

BACKGROUND INFORMATION: Pollack, Ronald: "The Poor Pay More;" Greenstein, Robert: "An End to Persistent Poverty and Hunger in America;" Goodwin, Mary: "The Poor Can't Afford to Eat," FFPNFP.

PROCEDURE:

1. Have students determine the weekly food budget for a family of four for food stamp or welfare recipients. If participation in the food stamp program in your community is low, use welfare allowance; if participation in food stamp program is high, use food stamp allowance. (This information may have been calculated by Welfare Payments or Food Programs Committees in Activity Two.)
2. Based on one of the budgets, have students plan menus and "shop" for one week's food (without actually purchasing) at grocery stores in both a low income and higher income area. Compare quality, cost and variety for the foods. Observe any differences in the stores (cleanliness, size, attitudes of employees, etc.)
3. Have students calculate one person's food allowance for a day, and for a single meal as follows:

   Food allowance for four persons for thirty days __________
   Divide by four: one person/thirty days __________
   Divide by thirty: one person/one day __________
   Divide by three: one person/one meal __________

4. Have each student plan, prepare, and eat meals totalling this amount for one day.
5. DISCUSS: How do you feel about eating on such a limited allowance? How much time and effort went into trying to plan the meal? Was the meal tasty and nutritious? What resources did you need? Would these be available to needy people? How would you feel about living at this level indefinitely?
6. Have students prepare a meal using cost calculated above. Invite officials from agencies and organizations involved with hunger in the community. Include policy-makers, elected and appointed officials, and members of community groups working on poverty problems. Have a panel debate with questions suggested by students.
   DISCUSSION SUGGESTIONS:
   * Is poverty a problem in our community?
   * Is hunger a problem in our community?
   * Are government programs adequately meeting the needs of our community's poor?
   * What changes are needed in present policies?
   * What can community members do to alleviate poverty?
   * Where is eradication of poverty in the ladder of priorities for local politicians? community groups? officials of welfare programs? the federal government? yourself?

Activity Four

Lifeline Foods

OBJECTIVE: To identify inexpensive, nutritious foods. To promote policies which insure low prices for these foods.

PROCEDURE:

1. INTRODUCTORY COMMENTS: In some parts of the country co-ops are offering an assortment of "lifeline foods" chosen from the four food groups. That is, stores make sure that "specials" cover a range of nutritious foods broad enough to comprise a good diet. Mark-up is kept low on these foods; profits are made on other items. New foods are chosen weekly.
2. Have students form groups of six to eight. Have each group choose five to eight foods that should be lifeline foods, giving short explanations of why each was chosen. SUGGESTED CRITERIA: nutrition, wide use, appeal (including preferences of ethnic and age groups), ease of preparation, use of fruits and vegetables in season.
3. Have groups share lists and explanations. Develop a master list.
4. Have interested students contact shoppers, members of anti-poverty groups, store managers, local nutritionists, and the consumer advisors of local supermarkets. What are their views on lifeline foods? Do they agree with the class list of appropriate foods? Would consumers buy lifeline foods? Would such foods help to provide good nutrition? Why or why not? Would retail stores and co-ops be willing to cooperate in a lifeline foods program? Why or why not?
5. Have students write an article explaining the concept, listing possible foods, and disclosing views of community members and supermarket officials. Encourage students to work with community groups to urge stores to adopt a lifeline foods policy.

Activity Five

Food Stamps: Good or Bad National Investment?

OBJECTIVE: To assess strengths and weaknesses of the federal food stamp program.

RESOURCES: FRAC, 25 West 43rd Street, New York, New York 10036; Children's Foundation, 1028 Connecticut Avenue, N.W., Washington, D.C. 20036; local food stamp office; nutritionists, sociologists; local anti-poverty and anti-hunger groups.

PROCEDURE:

1. INTRODUCTORY COMMENTS: One group of critics has called the food stamp program a haven for chiselers. They claim that food stamps are acquired fraudulently by persons not truly in need. Earl Butz, Secretary of Agriculture, has stated that Americans are "fed up" with the food stamp program, and has charged that it is an

incentive against working. These critics urge more restricted eligibility requirements and careful screening and monitoring of all applicants and recipients.

Another group criticizes the program for falling far short of the real needs of the poor. These critics charge that participation is unnecessarily low due to severe eligibility requirements, poor outreach efforts, and difficult, humiliating application procedures. Moreover, many of these critics maintain that the program often fails to supply recipients with enough stamps to purchase an adequate diet.

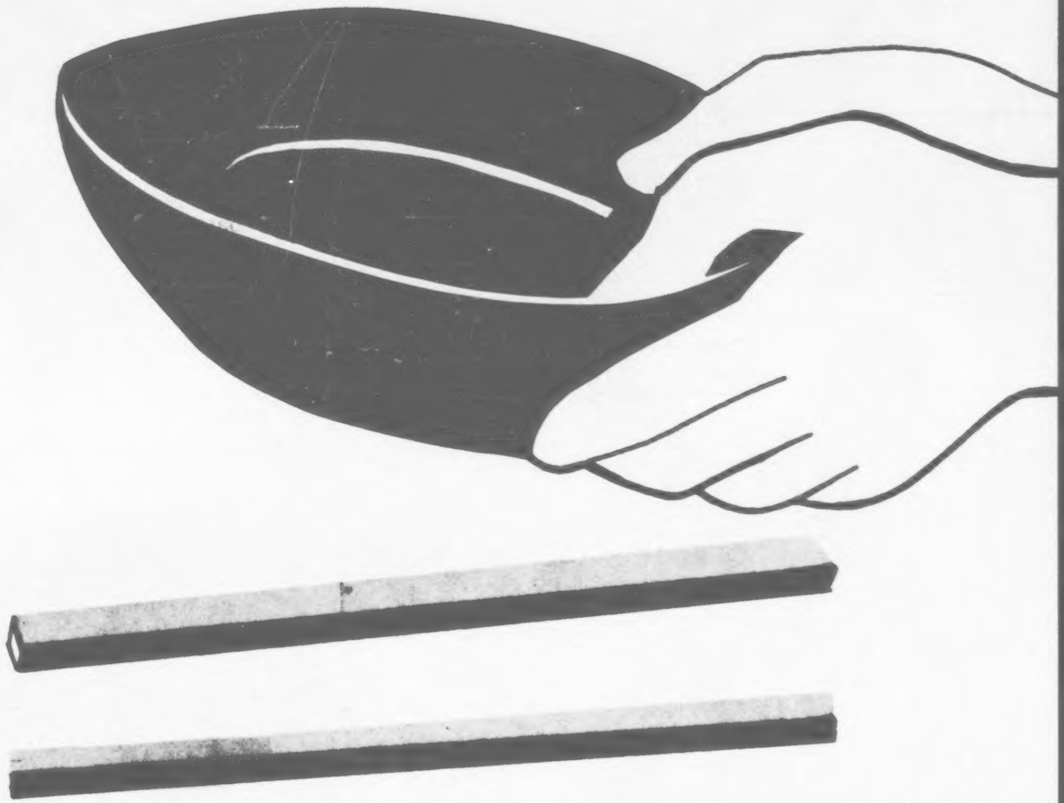
2. Divide the class into three groups: one group should represent the critics who cry "too much"; another group should represent critics who cry "too little"; the third group should represent those who basically support the program as is.
3. Ask each group to prepare an argument defending its views. Encourage them to use magazine and newspaper articles, information supplied by USDA, FRAC, and Children's Foundation, local food stamp office, local anti-poverty and hunger groups, nutritionists and sociologists, and other resource persons.
4. Have each group appoint a spokesperson. Form a panel and allow a five-minute policy statement from each member. Allow an additional two to three minutes for additions to each statement from other committee members.
5. OPEN DISCUSSION: Allow several minutes of open questions. Ask students for recommendations to improve the food stamp program. Should it remain the same? be slightly modified? completely overhauled? eliminated?
6. Ask students to write a one- or two-paragraph report including:

   * which group they were in,
   * whether they agree or disagree with their group's position,
   * the most persuasive argument on the other side,
   * how the food stamp program should be changed.

   Encourage students to write their congressional representatives to express their views.

7.

WORLD HUNGER



What Is Hunger?

Those who have never known hunger cannot easily imagine living with the constant threat of starvation nor understand its effects on millions of people around the world. Twinges of hunger resulting from a skipped or delayed meal are the only form of hunger that most of us have experienced; usually this discomfort was allayed within a short time. Hunger does exist in our own country and throughout the world on a dramatic scale. Its tragic effects on individuals, and on whole societies, must be recognized and understood in order to work towards ending the world food crisis.

What are the DIMENSIONS OF HUNGER? One-half of all child deaths are in some way attributable to malnutrition. More than 200 million children are suffering from malnutrition; according to U.N. estimates, about 460 million people (about twice the population of the United States) suffer malnutrition. In other words, at least one person in eight in the world is hungry.

WHO SUFFERS HUNGER? A comparative view of developed and developing countries' nutrition situation shows that inequalities begin at the international level:

1969-1971	Energy calories per capita per day	Protein grams per capita per day
Developed Countries	3, 100	96
Developing Countries	2, 200	58

Source: "Assessment of the World Food Situation--Present and Future," U.N. Report

These figures are misleading because of substantial gaps in nutritional status between the rich and poor within both developing and developed countries. Many of the affluent, developed countries of the world have serious pockets of hunger and malnutrition. In developing countries, comparative studies of children from poor and well-to-do homes show that poor children receive about half the calories of energy and grams of protein consumed by children of non-poor families.

Children, pregnant women and the elderly are particular victims of malnutrition. If the food supply is inadequate, these people are first to feel the effects. Within families, working adults tend to take the larger share of food for themselves, a natural reaction to their need to support the family.

What are the EFFECTS OF HUNGER? They were described this way in one report:

> Starvation breaks down the human being's physical and mental powers and his psychological balance. In the process of physical deterioration the adult heart is reduced to the size of a child's. The eyes become sunken and dull, and the hair dry and drab. Tissues become wasted. Edema sets in so that water in the body builds up causing the victim's stomach to become grossly bloated. Because digestive enzymes are not produced, chronic diarrhea results.
>
> --"World Food Supply," J. Carlisle Spivey, Management Institute for National Development

The effects of hunger begin early. The mother's health and diet are critical for the proper development of the fetus. A poorly nourished pregnancy often results in undersized infants with little resistance to disease. The vicious malnutrition/infections cycle of the hungry becomes established early in childhood. Diseases easily shaken off by a healthy individual (such as measles) often prove fatal to the malnourished child.

Severe deficiencies of necessary nutrients cause serious disease.

> People whose bellies are full can still die of malnutrition if their diets lack certain essential elements. Lack of the proteins containing essential amino acids--found in milk, meat, fish, beans and nuts--can bring on kwashiorkor, a wasting disease that kills tens of thousands of children each year in Africa, India, Southeast Asia and parts of South America. Kwashiorkor victims, whose tissues are usually swollen with fluid, develop a scaly rash and liver troubles.... Other deficiency diseases can be equally deadly. Rickets, which result from a lack of Vitamin D, can produce soft, deformed bones in children. Beri-beri --caused by too little of the thiamin normally found in vegetables, liver, pork, eggs and whole grains--affects the heart, the circulatory system and the brain. Its victims are unable to remember and prone to confabulation, the concocting of stories to fill memory gaps. A lack of niacin (commonly found in brown rice, fish and meat) can produce pellagra, a deficiency disease characterized by the "four D's": dermatitis, diarrhea, dementia and death.
>
> --Time, November 11, 1974, p. 68

The diseases detailed above are not the only results of deficiencies. The lack of essential nutrients often results in drained vitality and lowered efficiency, alertness, endurance, and creativity, without showing precise symptoms. Increasing data relate prenatal and early childhood protein malnutrition to inadequate development of the brain and central nervous system. The damage is irreparable and irreversible. Aside from actual brain damage, malnutrition has a serious and insidious psychological affect--leading to lethargy, desperation, hopelessness, and lack of initiative.

These realities confront millions daily. Hunger means constant pain and struggle for millions of individuals. For society, it means a serious undermining of the human resources needed to build a better world.

Food Supply

History is filled with accounts of famine. Today, however, with the world's food producing resources tightly interrelated, the extent of future famine could be catastrophic. U.S. agriculture--dependent on petroleum for fuel and petrochemicals--is related as never before to the oil supply. An oil crisis would cause real trouble for the United States and tragedy for the developing world. A poor crop of soybeans in the United States affects Japan where imported soybeans are an important food and protein source. Russia's purchase of enormous amounts of North American wheat results in inadequate supplies and high grain prices for the poor countries of the world. "Food Crisis" has a new meaning in an interdependent world.

Technical constraints are beginning to undermine efforts to increase world food output as rapidly as possible:

* Most of the good cropland of the world is already under cultivation;
* Many regions of the world where land is still available do not have an adequate supply of fresh water necessary for irrigation;
* Large quantities of fuel and petrochemicals are needed for the production leaps in developed countries. Most developing countries cannot afford these materials;
* Ecological effects of food production are beginning to limit food supply. Examples are the overfishing of the world's oceans; the contribution of overgrazing, deforestation, and severe drought to famine in the Sahel; and the role of deforestation in producing more frequent and severe floods on the Indian subcontinent.

NORTH AMERICAN "BREADBASKET"?

The security of the food supply has diminished as the world has grown increasingly dependent on North America (United States and Canada) for food reserves. North America now supplies 93% of grain exports. Reduced agricultural production in North America for even one year would cause severe repercussions throughout the world. Grain reserves, held in large part by the

United States, have fallen to the lowest point in decades. In 1975 food reserves were equivalent to about 25 days of consumption. (In 1961 reserves represented 95 days of world consumption.) This leaves little cushion when drought or famine cause unexpected import needs. The USDA has opposed government-held grain reserves, preferring to leave grain in private hands, guided by market forces. Unfortunately, most poor countries are priced right out of the market. Japan and Western Europe together have about 1/6 of the population of the poor world, yet they import 20% more grain than all underdeveloped countries taken together.

Meanwhile, U.S. food aid has been drying up as well. PL 480 (the Food for Peace Program) has been providing large-scale food aid over the last two decades. Passed in 1954, the bill was intended to satisfy many goals at once--providing an outlet for U.S. surpluses, building future commercial markets, furthering U.S. foreign policy, aiding the economic development of recipient countries, supplying the food relief programs of the U.N. and voluntary agencies, and forestalling massive famine in case of natural disaster.

It is important to distinguish between Title I and Title II of the program. Under Title I, food is sold under long-term loans at low interest rates. Under Title II food is provided on a grant basis and distributed through voluntary relief agencies such as CARE, Catholic Relief Services and Church World Service, and the U.N.

The United States has given large quantities of food aid. From 1965-1973, the United States provided $8.8 billion in food aid, four times greater than the total contributed by other developed nations. Yet, aid often had strings attached.

* In times of great need our food aid is drying up. The dollar value of Title I (concessionary sales) increased slightly between FY 1972 and FY 1974, but the total quantity of grains and high protein foods shipped in FY 1974 fell to less than one-third of 1972 levels, and less than one-tenth of the large volume of the mid-sixties. Title II aid increased slightly between the mid-60's and 1972, but declined sharply between 1972 and 1974. In 1974 wheat shipments were half the level of 1973, and rice and milk disappeared entirely.

* The United States and Japan are the only nations that give concessionary sales as aid. All other donors give only grants.

* Although the United States has given large quantities of food aid, it has given a much smaller amount, as a percentage of its wealth, than many other developed nations. According to Frances Moore Lappé, author of Diet for a Small Planet:

> ...throughout the 1960's the United States never gave disproportionately more than its share in aid as a percent of our GNP. Today, far from being the world's example of generosity, we have set an example of rapid decline in assistance. The United States now ranks thirteenth among 17 industrialized countries as a donor of aid in relation to GNP. As a percent of GNP, our aid is half what it was in 1962, so that in real aid we are currently giving about one-quarter of one percent of our GNP.

In 1975 Sweden reached its goal of one percent of GNP for aid; Norway and the Netherlands gave close to this amount.

* In the past the recipients of Title I food aid were determined more by politics than by need. U.S. allies in Southeast Asia and the Middle East received most of the aid; many of the neediest countries received very little. The saga of food aid to Chile illustrates the political use of the program:

> In 1970 Salvador Allende's Popular Unity government took office in Chile. U.S. policy makers did not like the leftist politics of this democratically elected government and took action. First, food aid was decreased to a trickle over the next four years. Military aid, however, increased substantially, going to the strongest pro-U.S. and anti-Allende faction of Chile's government. In 1973 the military violently overthrew the government and established a dictatorship. By 1975, the United States had decided to increase food aid almost thirtyfold. The important point to remember is that food aid changed with the politics of the situation, not increased or decreased hunger.
>
> --American Friends Service Committee Newsletter

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Congress passed a much needed law in 1975 which required 70% of food aid be granted to the neediest nations, as designated by the United Nations. It appears that this policy will continue assuring humanitarian rather than political granting of aid.

THE GREEN REVOLUTION

A worldwide dependence on North America's food production is not the answer to global food problems. Developing nations can't afford the machines and raw materials necessary to maintain such a system. Efforts should be directed to expanding production in developing countries themselves. "The Green Revolution" was introduced in the mid-60's following twenty years of intensive agricultural research in Mexico and the Philippines; it is a technological approach to increasing yields of basic food crops. The Green Revolution includes:

* high yielding varieties (HYV) of crops--notably wheat and rice developed through genetic manipulation;

* extensive use of petrochemicals--fertilizer, insecticides, herbicides, and fuels;

* extensive use of water for crop irrigation (provided by dams and well systems);

* farmers' access to credit for buying necessary inputs.

In certain regions of the world, the Green Revolution has increased production of grains dramatically. Major increases in wheat yields have occurred in Mexico, India, Pakistan and elsewhere; in rice productivity in parts of the Philippines, Indonesia, India, Pakistan and Latin America. India, for example, increased its wheat production from 11 to 26 million tons over a seven-year period from 1965-1972, an increase in production of a staple unmatched in history. The Philippines increased rice production 12.4% annually between 1967 and 1972.

Yet despite substantial gains in some areas, several problems have been identified with the Green Revolution:

* It is highly dependent on the correct combination of inputs. Shortages of water, pesticides or fertilizer seriously undermine the usefulness of HYVs. With rapid increases in the price of oil, these shortages are a continuing problem for the developing world.

* In several Asian countries the production of protein-rich legumes (beans and peas) has declined over the last decade. Many observers fear that farmers are replacing these crops with HYVs of grains. Quantity may be replacing the quality of food raised.

* Theoretically many of the features of the Green Revolution could be used by large farmers and small farmers alike. In reality, in most locales, farmers with large holdings have access to credit and technical advisory services--so the rich get richer "the Green Revolution-way" and the poor get poorer. Moreover, widely used high-yielding varieties only exist for wheat and rice. Since many small farmers grow other crops, e.g., corn in Latin America, only the large-scale commercial farmers grow and profit from HYVs in some places.

* Although labor is abundant in most developing countries, workers may be replaced by capital-intensive methods once the Green Revolution is well-established. Moreover, in some areas landlords recognizing the increased profitability of their land, have reacted by displacing their tenant farmers.

The Green Revolution is a technological approach to solving the developing countries' food problems. The Green Revolution imposes the agricultural system of the developed nations on the social, economic, political and physical environment of the developing nations. It has increased yields impressively in some areas but in order to fulfill its promise, research must be tailored to the varying needs--both technological and social--of different nations. We will not find one universal solution for increasing production but must cooperate closely with developing nations, adapting technology to human needs.

The Demand for Food

POPULATION

Changes in world demand for food are a critical part of today's food crisis. Population growth is the most frequently cited factor in increased global demand for food. The figures are dramatic:

> The current world population growth rate of nearly 2 percent annually--which brings a doubling every 35 years--is unprecedented. It took 2 million years for man's numbers to reach 1 billion, but the second billion came in only 100 years, and successive billions are coming even faster. At the present rate of increase, the sixth billion will require less than a decade. If the present growth rate were to be maintained for a century, it would then take only a year to add one billion to the population and only three years to add a number equal to the entire population of the world today.
>
> --Lester Brown, Our Daily Bread

Many developing countries have relatively high population growth rates. Assuming constant food consumption levels per person, population growth directly increases demand for food. A population that doubles in twenty-five years will also double food demand in that time. Over the past decade food production has increased about 30% globally. This expansion has resulted in a 15% per capita increase in food production in developed countries. But in developing countries growth in food production has been wholly absorbed by population growth, resulting in virtually no improvement in diet.

As population growth clearly burdens the food supply in some regions, governments have supplied birth control information, contraceptive devices, and sometimes gifts or monetary rewards to couples that limit their families. But family planning itself is usually inadequate to limit population growth or supply the needy with food. Family planning only succeeds if people want to limit the size of their family. Because children help produce goods and are a source of security and pleasure for many poor people in developing countries, the motivation is absent. Although on an international scale population control is advisable, it does not offer an individual family a "bigger piece of the pie."

Several studies have shown that in more egalitarian countries birthrates tend to decrease more rapidly. Even if GNP does not increase rapidly, modern social benefits such as education, health, employment and farm credit systems have been linked to lowered birthrates in China, Barbados, Sri Lanka, Taiwan and Cuba.

Infant mortality and life expectancy are two important health factors linked to family size. In many developing countries a woman must bear six or more children to insure that one son will survive to adulthood. Since children in these areas perform necessary labor and are the only means of old age security, couples tend to have as many children as possible. The infant mortality rates in North Europe and North America lie between 10 and 20 deaths per 1,000 live births; in much of Africa they lie between 150 and 200 deaths per 1,000 live births. If these rates were significantly lowered, sociologists feel that birth rates would also decline.

One other important factor related to population size is opportunities for women in education and occupations outside the home. These opportunities give women alternatives to a childbearing role; higher education levels have been closely correlated to lowered birth rates.

Population growth should be halted. But it needs to be understood as part of a complex of economic, political and social issues. Social changes such as those identified above require vast economic and political reform. Only when realistically faced can the means to population control be effected.

AFFLUENCE

The disproportionate use of resources by the world's affluent also exerts pressure on the world food supply. The staple of mankind is grain (rice, wheat, and secondary grains such as oats, rye, barley, millet, corn and sorghum). Humans directly consume some of these grains, but a growing proportion, especially in affluent nations, is fed to livestock which is then consumed by people. The developed countries, with 30% of the world's population, consumed 51% of the world's grain supply between 1969 and 1971 (more than 600 million tons). Of these 600 million tons, some 370 million became animal feed. These 370 million tons represent a much higher figure than the total human consumption of grain in China and India, which together comprise 36% of the world's population.

Rising demand for meat throughout the affluent world and among the wealthy in poor countries has contributed to the rising demand for grain and to the recent rises in grain prices. The higher prices mean that developing countries must pay more for their growing imports. The average person in the United States or Canada consumes about five times the grain consumed by an Indian, Columbian or Nigerian. Meat consumption accounts almost solely for this difference. In some nations, like the United States, beef consumption has more than doubled in the last twenty-five years.

When animals feed on pasture land and forage, they efficiently convert plants not edible by humans into high quality animal protein. Today, however, cattle graze for a short time, and then are moved to feedlots where they consume grain and protein feeds. This system fattens cattle in half the time as grazing, and produces the marbled meat Americans are so fond of. Much cropland is used to grow animal feed instead of grain for humans.

Animals have different rates or "efficiencies" in converting feed to edible animal protein. Chickens require two to three pounds of feed to produce one pound of meat. Cattle require about sixteen pounds of grain to produce one pound of meat. Since part of the cattle's lives is spent grazing, however, they consume an average of seven pounds of grain for every one pound of meat produced. The rest of the grain becomes inaccessible to us; it is either used by the animal to produce energy, or to make some part of its body which we don't eat (like hair), or is lost as manure.

Simply cutting down on meat consumption and partially substituting complementary plant protein would free large quantities of grain for human use. Most Americans, in fact, consume too much fat-marbled meat, contributing to major health problems. Plant-centered diets not only free grain, but can be much more healthful. Those who eat meat should insist on grass-fed meat.

Alternatives to the feedlot system do exist. Other countries still allow most of their cattle to graze throughout their lifetimes. Research can create better foraging grasses and more efficient beef cattle. The beefalo, a cross between the buffalo and beef cattle, produces tasty, inexpensive meat, feeds entirely on roughage, and can put on its first 1,000 pounds in half the time beef cattle do.

How Affluent Nations Contribute to World Hunger

Some of the most basic causes of world hunger lie within the relationship between the rich and poor world. The United States, with 6% of the world's population, uses about 30% of the world's resources. If only 20% of the world consumed at this rate, there would be nothing left for the other 80%.

In order to maintain an affluent lifestyle, developed nations import fuel, metals, agricultural products and other resources from poor nations. Dr. Georg Borgstrom estimates that the western world currently imports one million metric tons more protein from the hungry world than it delivers to them in grains. Once received, most of these products are fed to livestock. In addition, Dr. Borgstrom estimates that one-third of Africa's peanut crop (containing the same percent of protein as meat does) is consumed by livestock on other continents.

We not only import feed for our livestock, but beef itself as well. We import about five pounds of meat per capita each year. Although this amounts to four percent of our beef consumption, it is equivalent to the total yearly meat intake in much of the poor world. About half of this imported meat comes from the poorest, most protein-deficient sections of Central America: Costa Rica, Nicaragua, Honduras, Guatemala. Most of the profits from beef sales return to the pockets of wealthy landowners or foreign firms, rather than to the people most in need.

Not only food distribution, but the actual decisions about what is grown serve the affluent nations of the world. Most developing Asian and African nations with deficient food supplies were colonies of the Western developed countries until 25-30 years ago. Political independence did not significantly change their dependence, a major obstacle to growth. The former colonial owners discovered new ways to dominate the economy of these countries. Large, often foreign-owned, firms obtain products and raw materials at the lowest possible prices for marketing in the developed world, without regard to the needs of the hungry. The crops most often involved--tobacco, rubber, tea, coffee, cocoa, cotton, other fibers--have little or no nutritional value.

These "cash crops" currently occupy one-tenth of every cropped acre in the world. Their cultivation is encouraged in many ways--agricultural research, international trade agreements, the tariffs of developed nations, and investments of multinational corporations. It is more profitable to grow high-profit crops for export than to raise corn, wheat, or rice to feed local people. But these profits accrue to the nation's wealthy elite and to multinational corporations, while the masses of people remain poor and undernourished.

The standard solution offered by affluent countries to the poverty of developing nations is economic development. Even a modified version of western-style development, however, is clearly impossible in light of the tremendous amount of natural resources required to support high levels of materialism and consumption. Moreover, without significant structural change, such as land reform and other egalitarian social changes, the development process often aids the rich and middle class, rendering the poor more wretched than ever. According to the U.N. World Food Conference Report, "Assessment of the World Food Situation--Present and Future":

> The causes of inadequate nutrition are many and closely interrelated, including ecological, sanitary and cultural constraints, but the principal cause is poverty. This in turn results from... concentration of power, wealth and incomes in the hands of relatively small elites of national or foreign individuals or groups. In the rural areas, land and water, capital, technical knowledge, credit and institutional assistance are distributed in a most uneven way. The majority of the rural population is either landless or has to make a living from the exploitation of meagre land and water resources. In spite of the fact that annually millions of rural inhabitants migrate to the urban areas, unemployment and underemployment are usually very high and rural wages generally extremely low. Production patterns, geared to the satisfaction of the needs of external markets, or those of the smaller middle and high-income national groups, do not favour diversification and the proper utilization of available indigenous resources. Land tenure and production structures constitute therefore one of the basic reasons for rural poverty and malnutrition.... It will be necessary to break the vicious circle of unemployment, low level of food production, low-productivity-low-income which is strangling such a high proportion of humanity. This, in its turn, could mean very profound transformations of the present socio-economic structures.

The affluent nations, through excessive consumption of natural resources, protection of the interests of multinational corporations, and support of governments that are unresponsive to the needs of the poor, block the means to development for many poor nations of the world.

Talking About Solutions

Any proposed solution to world hunger is grounded in particular assumptions about hunger's basic causes. Three major viewpoints can be cited:

* LIFEBOAT THEORISTS: THERE IS NO WAY TO SOLVE THE PROBLEM OF WORLD HUNGER

The lifeboat theory holds that the affluent nations should only extend aid to the most promising poorer countries. In effect, the affluent should admit only a selected number of the least seriously affected poor to "limited space" on the lifeboat, since spreading scarce resources too thinly could jeopardize the survival chances of everyone.

Added to this is the suggestion that affluent nations should choose recipients of aid through the method of "triage"--the World

War I medical practice of dividing the wounded into survival categories in order to concentrate medical resources on those who could most benefit, and to ignore those who would die even with treatment, or survive without it.

The major assumption of this solution is that there is no solution to world hunger. It is inevitable, lifeboat theorists maintain, because we simply do not have enough resources to feed the growing world population.

International planners and economic reformers challenge these assumptions. Lifeboat theorists maintain that an absolute shortage exists; yet statistics show that adequate food supplies are presently available each day for each person on earth if equally distributed, and further expansion of food supply is possible.

The basic metaphor of the world as a single lifeboat is wrong. The lifeboat theorists are blind to the ornate paraphernalia that some lifeboat passengers carry with them.

We should seek to discard some of these unnecessary possessions and begin to use resources to build more lifeboats; that is, to increase food production in the needy countries.

* THE INTERNATIONAL PLANNERS--BY IMPROVING THE SYSTEM WE CAN SOLVE WORLD HUNGER

The International Planners attribute hunger to mismanagement and malfunction of a basically sound international system. Underdevelopment is seen as the fundamental cause of world hunger. Economic development for poor nations (and people), voluntary limits in demand by rich nations, and international cooperation in food aid, food reserves and agricultural research are general solutions. Within this approach a wide spectrum of viewpoints exists, ranging from those that propose primarily technological solutions (e.g., family planning, The Green Revolution) to those that emphasize the social reforms which must accompany any technological solutions. The specific policies:

FOOD DEMAND:

- LIMIT POPULATION GROWTH
  - economic development and social reform
  - family planning
- SIMPLIFY DIET (AND LIFESTYLE) IN AFFLUENT NATIONS
  - substitute vegetable protein for animal protein
  - cut down on other sources of energy waste and food waste in affluent nations

FOOD SUPPLY:

- GREEN REVOLUTION
  - develop and disseminate high yielding varieties and "modern" agricultural methods
- PEOPLE-ORIENTED DEVELOPMENT AND AGRARIAN REFORM
  - orient development efforts to small, efficient farms
  - develop "progressive rural structure" of marketing, credit, transportation, storage, and agricultural education
  - orient international agricultural research to needs of tropical countries
  - orient agricultural research towards use of intermediate technology and labor-intensive agricultural methods

ALLEVIATING FOOD INSECURITY:

- internationally managed systems of food reserves
- emergency food aid

* ECONOMIC REFORMERS: BY CHANGING THE SYSTEM WE CAN SOLVE WORLD HUNGER

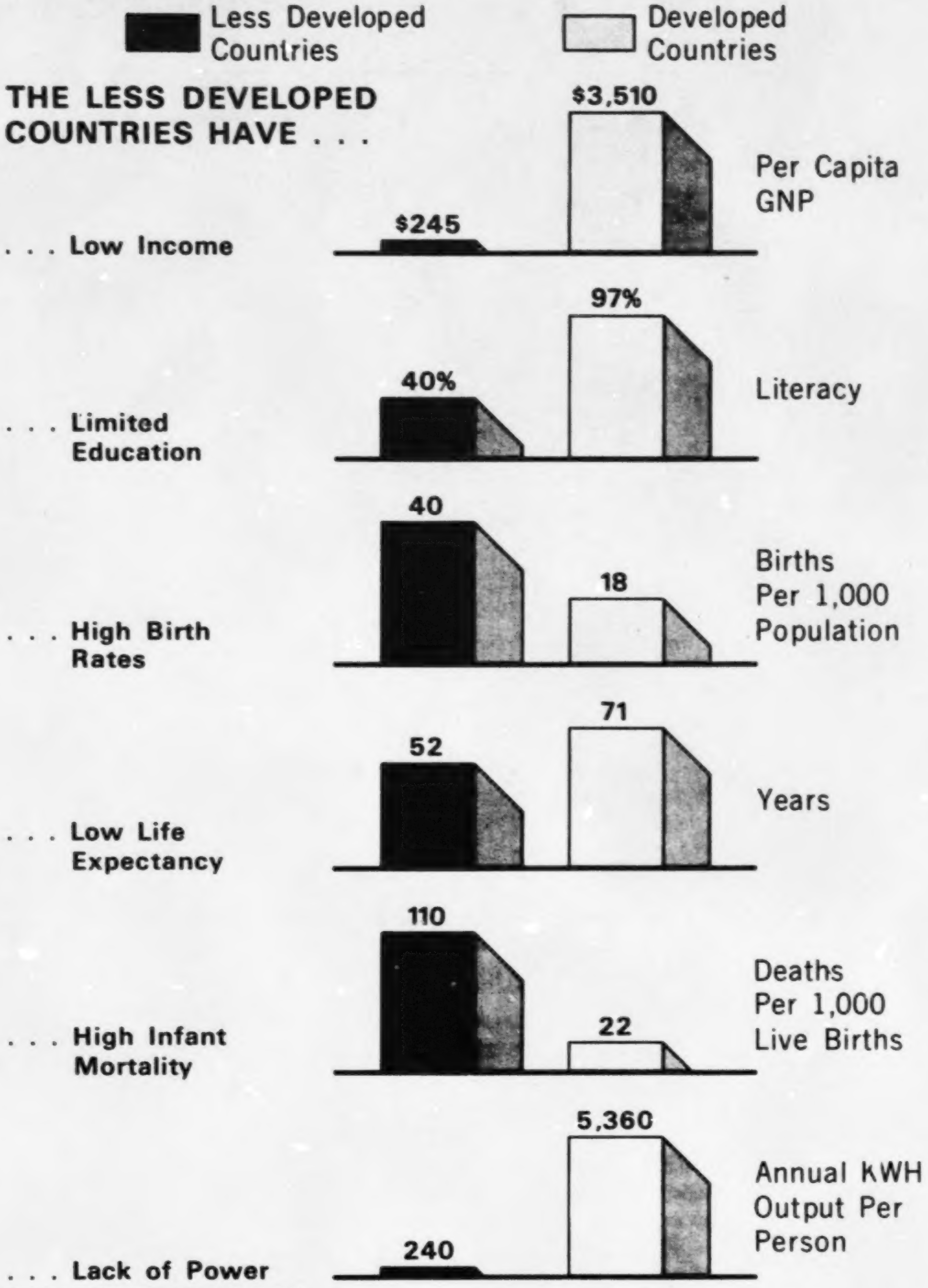
According to this viewpoint, the developed world needs to stop supporting repressive governments which protect the interests of a rich elite with little commitment to the needs of the poor. Moreover, affluent nations need to end the domination by their multinational corporations of the economic and political affairs of the poor nations. These actions would free poor nations to make the fundamental social and agricultural reforms necessary to eliminate poverty and hunger.

Economic reformers propose profound changes in the trade relationships between developed and developing countries. This would permit transfer to the poor countries of a far greater share of the profits realized from the marketing of their products.

Economic reformers call for massive "de-development" of the affluent nations so as to drastically reduce consumption of the world's natural resources. Not only are they exhausting global supplies of resources, but they are polluting the environment and undermining global life support systems. Meanwhile, massive "re-development" must occur. William Moyers and Pamela Haines have defined "re-development" as:

> ...an emphasis on human development rather than materialism...simpler life style (small is good; little and less is better); production for use by many, rather than for the profit of the few; safer and more ecological products and production methods; renewable energy sources; cooperation replacing competition; planning replacing markets. Massive redistribution of resources would be required, along with guaranteed provision of free or low-fee services to meet basic needs (such as health care, education, housing, child care) and decent employment. While having less conspicuous consumption we would have more security, mental and ecological health, greater control over our own lives at home, and freedom from being oppressors of poor people and future generations.

THE DEVELOPMENT GAP



Source: Statistics and Reports Division, U.S. Agency for International Development.

OFFICIAL DEVELOPMENT ASSISTANCE (ODA) FROM DEVELOPED COUNTRIES

(as a Percentage of Gross National Product)

	1960	1965	1970	1971	1972	1973	1974	1975
Australia	.38	.53	.59	.53	.59	.44	.53	.54
Austria	n.a.	.11	.07	.07	.08	.13	.13	.13
Belgium	.88	.60	.46	.50	.55	.51	.56	.62
Canada	.19	.19	.42	.42	.47	.43	.51	.51
Denmark	.09	.13	.38	.43	.45	.47	.49	.50
France	1.38	.76	.66	.66	.67	.58	.55	.51
Germany	.31	.40	.32	.34	.31	.32	.30	.28
Italy	.22	.10	.16	.18	.09	.14	.10	.08
Japan	.24	.27	.23	.23	.21	.25	.24	.24
Netherlands	.31	.36	.61	.58	.67	.54	.61	.65
New Zealand	n.a.	n.a.	n.a.	n.a.	.23	.27	.36	.47
Norway	.11	.16	.32	.33	.41	.45	.63	.65
Portugal	1.45	.59	.67	1.42	1.79	.71	.47	.42
Sweden	.05	.19	.38	.44	.48	.56	.69	.70
Switzerland	.04	.09	.15	.11	.21	.15	.15	.15
United Kingdom	.56	.47	.37	.41	.39	.35	.34	.32
United States*	.53	.49	.31	.32	.29	.23	.21	.20

DAC TOTAL

ODA ($ millions)								
current prices	4,665	5,895	6,832	7,762	8,671	9,415	10,706	11,948
1973 prices	7,660	9,069	9,346	9,976	10,059	9,415	9,391	9,452
GNP ($ billions)								
current prices	898	1,340	2,010	2,218	2,550	3,100	3,530	4,100
ADA as % of GNP	.52	.44	.34	.35	.34	.30	.30	.29

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* In 1949, at the beginning of the Marshall Plan, U.S. Official Development Assistance amounted to 2.79% of GNP.

Source: James W. Howe and the Staff of the Overseas Development Council, The U.S. and World Development: Agenda for Action, 1975 (New York: Praeger Publishers, Inc., 1975), p. 258. Reprinted with permission.

POPULATION, FOOD SUPPLY AND DEMAND FOR FOOD IN INDIVIDUAL COUNTRIES

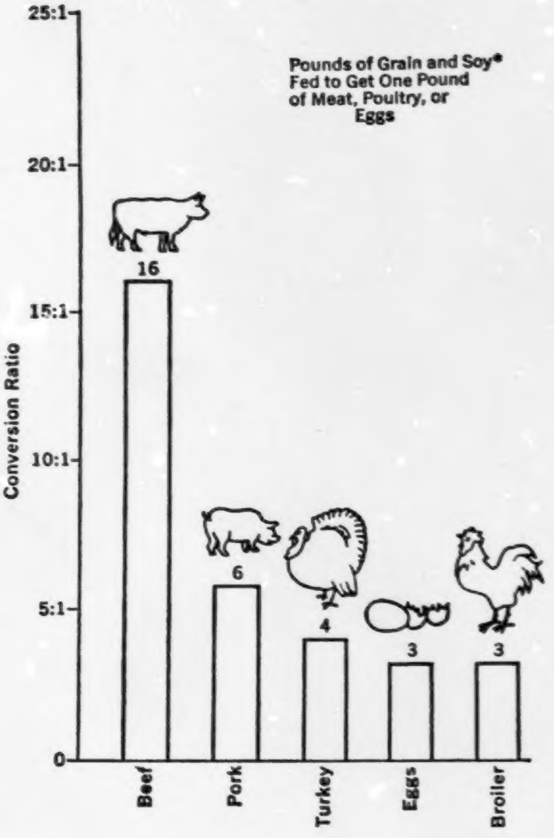
	Percentage rate of growth:			Dietary energy supply		Protein supply
	Population	Food production	Domestic demand for food	Kilo-calories per capita per day	% of require-ments	Grams per capita per day
Developed Countries						
Albania	2.8	3.6	4.6	2,390	99	74
Australia	2.1	3.7	2.4	3,280	123	108
Bulgaria	0.8	4.3	2.8	3,290	132	100
Canada	2.2	2.2	2.5	3,180	129	101
Czechoslovakia	0.9	1.8	1.9	3,180	129	94
Germany, Dem. Rep.	-0.3	1.6	0.8	3,290	126	87
Germany, Fed. Rep.	1.0	2.5	1.9	3,220	121	89
Greece	0.8	4.0	2.3	3,190	128	113
Ireland	0.1	1.7	0.3	3,410	136	103
Israel	3.4	7.7	4.9	2,960	115	93
Japan	1.1	4.3	3.7	2,510	107	79
Netherlands	1.3	3.0	1.7	3,320	123	87
New Zealand	2.1	2.7	2.0	3,200	121	109
Portugal	0.6	1.7	2.3	2,900	118	85
South Africa	2.4	3.9	3.2	2,740	112	78
Spain	0.9	3.4	3.0	2,600	106	81
Sweden	0.7	0.9	1.0	2,810	104	86
Switzerland	1.5	1.7	1.9	3,190	119	91
United States	1.5	2.0	1.6	3,330	126	106
U.S.S.R.	1.5	3.9	3.0	3,280	131	101
United Kingdom	0.5	2.8	0.7	3,190	126	92
Developing Countries						
Afghanistan	1.9	1.7	2.2	1.970	81	58
Angola	1.8	2.7	3.0	2,000	85	42
Bangladesh	3.5	1.6	-	1,840	80	40
China	1.7	2.3	-	2,170	91	60
Cuba	2.2	1.1	2.0	2,700	117	63
Ecuador	3.3	5.4	4.0	2,010	88	47
Egypt	2.6	3.4	3.8	2,500	100	69
El Salvador	3.0	3.6	4.1	1,930	84	52
Ethiopia	1.8	2.3	3.0	2,160	93	72
India	2.1	2.4	3.0	2,070	94	52
Indonesia	2.5	2.0	2.6	1,790	83	38
Iran	2.8	3.3	5.4	2,300	96	60
Jamaica	1.9	1.9	3.3	2,360	105	63
Laos	2.4	3.7	3.7	2,110	95	49
Mexico	3.4	5.3	4.3	2,580	111	62
Nigeria	2.4	2.0	3.1	2,270	96	63
Sri Lanka	2.5	3.6	3.1	2,170	98	48
Syrian Arab Rep.	3.0	1.8	4.6	2,650	107	75
Turkey	2.7	3.0	3.8	3,250	129	91
Uganda	2.4	1.8	3.2	2,130	91	61
Yemen Arab Rep.	2.4	-0.2	3.9	2,040	84	61

Annual Per Capita Grain Consumption in Selected Nations, 1964-66 Average

	Grain Consumed Directly (pounds)	Grain Consumed Indirectly (pounds)	Total Grain Consumed (pounds)	Grain Consumed as Multiple of Indian Consumption
Canada	202	1,791	1,993	5
United States	200	1,441	1,641	5
U.S.S.R.	344	883	1,227	4
United Kingdom	169	856	1,025	3
Argentina	223	625	848	2
West Germany	160	588	748	2
Mexico	305	242	547	2
Japan	320	211	531	2
China	312	118	430	1
India	288	60	348	1

SOURCE: Brown, Lester R.: Our Daily Bread (1975), Foreign Policy Assoc., Inc., p. 13. Reprinted with permission.

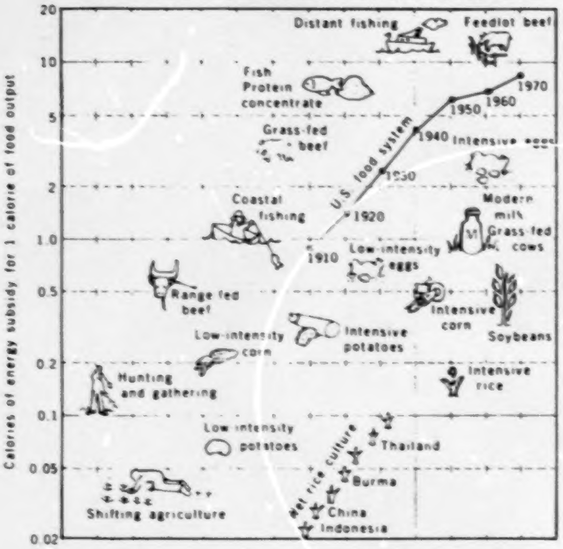
A PROTEIN FACTORY IN REVERSE



*Soy constitutes only 12% of steer feed and 20-25% of poultry.

SOURCE: Lappé, Francis Moore: Diet for a Small Planet (1975), Ballantine Books, p. 41. Reprinted with permission.

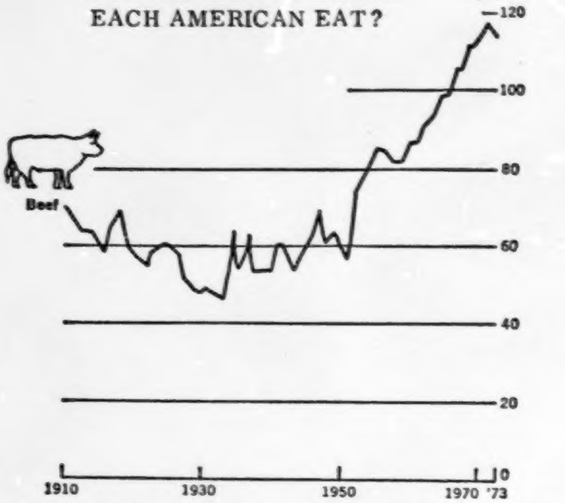
ENERGY SUBSIDIES FOR VARIOUS FOOD CROPS



Energy subsidies for various food crops. The energy history of the U.S. food system is shown for comparison.

SOURCE: Steinhart: C. E. and J. S.: Energy: Sources, Use and Role in Human Affairs (1975), Duxbury Press. Reprinted with permission.

HOW MUCH BEEF DOES EACH AMERICAN EAT?



SOURCE: Lappé, Francis Moore: Diet for a Small Planet(1975), Ballantine Books, p. 11. Reprinted with permission.

Activity One

World Hunger Survey Questionnaire

OBJECTIVE: To survey personal knowledge about and attitudes towards world hunger.

PROCEDURE:

1. Distribute questionnaires.
2. INTRODUCTORY COMMENTS: The purpose of this exercise is to determine your understanding and feelings about world hunger and poverty. You are not expected to know the answers to every question.
3. Give students sufficient time to fill out the questionnaire.
4. Discuss their answers with the class. In part one discuss the meaning of the facts: Which answers were surprising? Why? What are the explanations and implications behind the facts? What other facts would students like to find out?
5. In part two there are no right or wrong answers. Discuss students' reasons for agreeing or disagreeing with statements. Which statements did they react to most strongly? About which were they most uncertain? Ask students to pretend they are conducting an opinion poll. On which answers would there be most agreement among the American public. Most disagreement? Why?
6. List responses to question eight on the board. How many of the responses reflect "emotion" as opposed to descriptions? (A small number of emotional responses may indicate a lack of involvement.) Tally responses to question nine. Why did students reply as they did? Will problems be different in developed and developing nations? Will they be different for the rich and the poor? What problems will be shared by most of the world's people? Tally responses to questions ten and eleven. Why did students respond as they did? What could they do personally to alleviate world hunger?
7. THE QUESTIONNAIRE:

Part I. Factual Knowledge

1. _____ percent of the world's population lives in developing countries:
   a. Less than 10% c. about 50% e. about 90%
   b. about 25% d. about 75%
2. How much of the world's population lives in the United States?
   a. 3% b. 6% c. 9% d. 12% e. 15%
3. The United States has _______% of the world's resources.
   a. about 15% c. about 30% e. about 65%
   b. about 25% d. about 50%
4. Which three continents contain the majority of developing countries?
   a. Asia c. Africa e. Australia
   b. North America d. Latin America f. Europe
5. Which four of the following countries have the highest rate of population growth?
   a. India c. Saudi Arabia e. Nigeria g. Puerto Rico i. Portugal
   b. Australia d. Japan f. U.S. h. China (Mainland)

6. Which four of the above countries have the lowest rate of population growth?

7. Which item do you think receives the biggest "chunk" of the U.S. budget?
a. foreign aid c. welfare programs e. government operations
b. military d. education programs f. health programs

8. What percent of the U.S. GNP do you think goes to foreign assistance?
a. about 25% c. about 15% e. about 10%
b. about 5% d. under 1%

9. Do you think that U.S. aid to developing countries as a percent of GNP is:
a. more than that of any other developed country
b. more than most developed countries
c. about the same as other developed countries
d. less than many other developed countries

10. In 1958, a Central African earned enough money, from selling us 200 pounds of cotton, to buy four blankets. How many blankets could he buy today for the money earned from selling the same amount of cotton?
a. 1 b. 4 c. 8 d. 12

11. The average protein intake of each person in the U.S. is about 96 grams per day, in India it is:
a. about the same b. 1/2 as much c. 3/4 as much d. 1/3 as much

12. The population of the world is approximately 4 billion (4,000 million). How many people suffer from insufficient protein/energy supply?
a. 50 million c. 200 million e. 900 million
b. 100 million d. 460 million

13. The world's largest importer of beef is:
a. Taiwan b. France c. U.S.S.R. d. Kenya e. U.S.A.

14. The average person in the U.S. or Canada consumes ___ times as much grain as an Indian, Columbian or Nigerian.
a. 1 b. 2 c. 3 d. 5 e. 10

15. Approximately how many pounds of grain does a steer require to add on an additional pound of meat?
a. 1 b. 5 c. 16 d. 25 e. 30

16. Which three of these countries do you think have been designated most in need of food aid by the U.N. in 1974?
a. Bangladesh c. Honduras e. Egypt g. Kenya
b. Spain d. Cambodia f. Mexico h. Chile

17. Which three of the above countries do you think were given the largest amount of U.S. food aid in 1975?

18. The same amount of food eaten by 210 million Americans could adequately feed _____ Chinese on an average Chinese diet.
a. 300 million c. 1 billion e. 2 billion
b. 500 million d. 1.5 billion

Part II. Attitudes

1. The food I eat is not really related to hunger in the developing countries of the world.

2. People are hungry because there just isn't enough food to go around.

3. Most Americans have an accurate idea of how Africans live.

4. If poor nations would adopt the U.S. economic and political systems of capitalism and democracy, they would develop more rapidly.

5. The U.S. government should give more food aid to needy countries.

6. If poor nations would adopt a socialist economic and political system as in China, they would develop more rapidly.

7. People don't have enough to eat because they are unwilling to work.

8. Write the first five words that come to your mind when you hear the word "hunger."

__________ __________ __________ __________ __________

9. The major problems in the world for the rest of this century will be: (choose 3)
   - shortage of food
   - pollution
   - weapons race
   - future shock
   - inflation
   - disease
   - overpopulation
   - unemployment
   - energy crisis
   - war
   - widening rich-poor gap
   - urban slums
   - other

10. Check the two statements closest to your thinking:
    a. The problem of world hunger is so enormous and complex I don't see how my life or my efforts will really make much difference.
    b. The problem of world hunger is my problem, since the future of my life is tied to the lives of all other people on earth.
    c. The problem of world hunger can be solved, and my responsibility is to do everything possible to get people and governments to practice the solutions.
    d. The problem of world hunger is so urgent that I can't wait to know all I need to know before I take action to combat hunger.
    e. The problem of world hunger is mostly a problem of foreign countries, and it will have little effect on my life as a citizen of the U.S.
    f. The problem of world hunger is my problem, since the way that I live, and others around me live and eat, can help to cause or remedy hunger.

11. In an effort to overcome world hunger and poverty, what do you believe is a worthwhile and attainable goal by the year 2000?
    a. Equal distribution of wealth and resources among the world's people.
    b. Achieving minimum standards of nutrition and livelihood necessary to assure a tolerable existence for all the world's people.
    c. Continue to stave off massive starvation through emergency food aid programs, but don't expect to "solve" the problem of world hunger.
    d. Do as much as we reasonably can, but expect that many millions of people will die of starvation in the foreseeable future.
    e. Other:

ANSWERS TO PART I:

1. d--about 75%
2. b--6%
3. c--about 30%
4. Asia, Africa, Latin America
5. Saudi Arabia, India, Nigeria, Australia
6. Portugal, U.S., Puerto Rico, Japan
7. b--military
8. d--under 1%
9. d--less than many other developed countries
10. a--1
11. b--one half as much
12. d--460 million
13. e--U.S.A.
14. d--5
15. c--16
16. a--Bangladesh; c--Honduras; g--Kenya
17. d--Cambodia; e--Egypt; h--Chile
18. d--1.5 billion

The foregoing questionnaire is based on "Survey Questionnaire on Global Development," Jayne C. Millar, Focusing on Global Poverty and Development (Washington; D. C.: Overseas Development Council, 1974), pp. 219-223.

Activity Two

Living on Less Than $100 Per Year

OBJECTIVE: To visualize conditions of poverty experienced by most people in the developing world. To identify personal feelings and values related to poverty.

PROCEDURE:

1. Ask students to sit in a circle, or other arrangement that allows dialogue.
2. Ask students to close their eyes and imagine their own home in detail. Walk through each room. Then listen with eyes shut to the essay, doing what it suggests.
3. Read "Living on Less Than $100 a Year" aloud to the class.
4. DISCUSS: Although the U. S. is a developed country, many people live in poverty relative to the rest of the society; suffer from inadequate food, shelter, clothing, health care and education; lack of personal dignity and self esteem, and lack of freedom. How do you feel towards the poor in this country? Of the rest of the world? How does the "culture of poverty" described in the readings differ from your own lifestyle? How did this essay make you feel about your own possessions and surroundings? Do you feel any responsibility towards helping the poor people in the world or in your community? Why or why not? Which of the things taken away in this story would be easiest to live without? Which would be hardest? What affect does our own abundance of possessions have on the lives of people in developing countries?

LIVING ON LESS THAN $100 A YEAR

To begin to understand economic development we must have a picture of the problem with which it contends. We must conjure up in our mind's eye what underdevelopment means for the two billion human beings for whom it is not a statistic but a living experience of daily life....

It is not easy to make this mental jump. But let us attempt it by imagining how a typical American family, living in a small suburban house on an income of six or seven thousand dollars, could be transformed into an equally typical family of the underdeveloped world.

We begin by invading the house of our imaginary American family to strip it of its furniture. Everything goes: beds, chairs, tables, television set, lamps. We will leave the family with a few old blankets, a kitchen table, a wooden chair. Along with the bureaus go the clothes. Each member of the family may keep in his "wardrobe" his oldest suit or dress, a shirt or blouse. We will permit a pair of shoes to the head of the family, but none for the wife or children.

We move into the kitchen. The appliances have already been taken out, so we turn to the cupboards and larder. The box of matches may stay, a small bag of flour, some sugar and salt. A few moldy potatoes, already in the garbage can, must be hastily rescued, for they will provide much of tonight's meal. We will leave a handful of onions, and a dish of dried beans. All the rest we take away: the meat, the fresh vegetables, the canned goods, the crackers, the candy.

Now we have stripped the house: the bathroom has been dismantled, the running water shut off, the electric wires taken out. Next we take away the house. The family can move to the toolshed. It is crowded, but much better than the situation in Hong Kong, where (a United Nations report tells us) "it is not uncommon for a family of four or more to live in a bedspace, that is, on a bunk bed and the space it occupies--sometimes in two or three tiers--their only privacy provided by curtains."

But we have only begun. All the other houses in the neighborhood have also been removed; our suburb has become a shantytown. Still, our family is fortunate to have a shelter; 250,000 people in Calcutta have none at all and simply live in the streets....

And still we have not reduced our American family to the level at which life is lived in the greatest part of the globe. Communication must go next. No more newspapers, magazines, books--not that they are missed, since we must take away our family's literacy as well. Instead, in our shantytown we will allow one radio. In India the national average of radio ownership is one per 250 people, but since the majority of radios is owned by city dwellers, our allowance is fairly generous.

Now government services must go. No more postman, no more fireman. There is a school, but it is three miles away and consists of two classrooms. They are not too crowded since only half the children in the neighborhood go to school. There are, of course, no hospitals or doctors nearby. The nearest clinic is ten miles away and is tended by a midwife. It can be reached by bicycle, provided that the family has a bicycle, which is unlikely. Or one can go by bus--not always inside, but there is usually room on top.

Finally, money. We will allow our family a cash hoard of five dollars.... Meanwhile the head of our family must earn his keep. As a peasant cultivator with three acres to tend, he may raise the equivalent of $100 to $300 worth of crops a year. If he is a tenant farmer, which is more than likely, a third or so of his crop will go to his landlord, and probably another 10 percent to the local moneylender. But there will be enough to eat. Or almost enough. The human body requires an input of at least 2,000 calories to replenish the energy consumed by its living cells. If our displaced American fares no better than an Indian peasant, he will average a replenishment of no more than 1,700-1,900 calories. His body, like any insufficiently fueled machine, will run down. That is one reason why life expectancy at birth in India today averages less than forty years.

But the children may help. If they are fortunate, they may find work and thus earn some cash to supplement the family's income.... And if they cannot find work? Well, they can scavenge, as do the children in Iran who in times of hunger search for the undigested oats in the droppings of horses.

And so we have brought our typical American family down to the very bottom of the human scale. It is, however, a bottom in which we can find, give or take a hundred million souls, at least a billion people. Of the remaining billion in the backward areas, most are slightly better off, but not much so; a few are comfortable, a handful rich.

Of course, this is only an impression of life in the underdeveloped lands. It is not life itself. There is still lacking the things that underdevelopment gives as well as those it takes away: the urinous smell of poverty, the display of disease, the flies, the open sewers. And there is lacking, too, a softening sense of familiarity. Even in a charnel house life has its passions and pleasures. A tableau, shocking to American eyes, is less shocking to eyes that have never known any other. But it gives one a general idea. It begins to add pictures of reality to the statistics by which underdevelopment is ordinarily measured. When we are told that half the world's population enjoys a standard of living "less than $100 a year," this is what the figures mean....

--from Robert L. Heilbroner, The Great Ascent, Harper & Row (1963), pp. 33-37. Reprinted with permission.

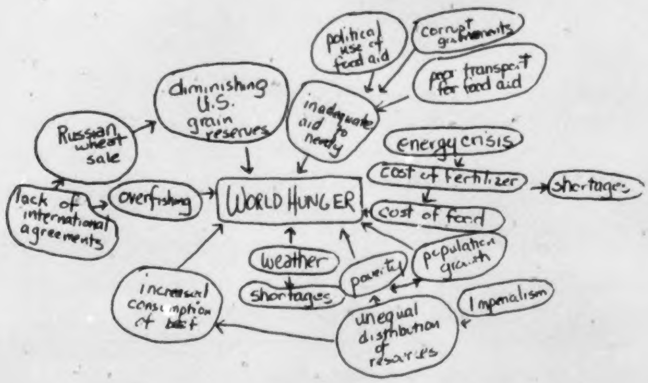
Activity Three

Web Chart on World Hunger

OBJECTIVE: To locate world hunger in the center of a web of forces directly related to it. To trace cause and effect relationships and world hunger.

PROCEDURE:

1. Use this activity as either an introductory one to tap the students' general knowledge and concepts about world hunger or after they have some familiarity with the subject through activities, discussions or readings.
2. Write "World Hunger" in the center of the blackboard. Draw a square around the words.
3. Ask students to free associate factors related to the problem of world hunger. Write their associations on the board, clustered around the words "World Hunger." Circle each factor (SEE SAMPLE BELOW).
4. Before writing words on the board, ask "Do you think this is related to anything else up here?" Connect related factors with dotted lines and (if possible) cause-effect arrows.
5. DISCUSS: Which factors are natural factors? Have the natural factors been affected by people? Which factors are caused primarily by people? Which problems could be solved by single nations on their own? Which need the cooperation of many nations? Which of the factors involve the United States?
6. Ask students to pick a factor where they would start to work for change in order to alleviate world hunger. Why? Choose one of these topics for general class discussion. What previous changes would be necessary to produce change at this point? Outline in colored chalk (Add circles if necessary). What changes would result from changes at this point? Outline in a different color of chalk (Add circles if necessary). Is this an effective place to work? Why or why not?


political use of food aid
corrupt governments
poor transport for food aid
diminishing U.S. grain reserves
inadequate aid to needy
Russian wheat sale
energy crisis
cost of fertilizer
shortages
lack of international agreements
overfishing
WORLD HUNGER
cost of food
weather
poverty
population growth
increased consumption of beef
shortages
Imperialism
unequal distribution of resources

Activity Four

Why Poverty?

OBJECTIVE: To analyze critically underlying causes of poverty.

BACKGROUND INFORMATION: Goodwin, Mary: "The Poor Can't Afford to Eat"; Transnational Institute: "Hunger Is Caused by Plunder Not by Scarcity"; Barnet, Richard and Muller, Ronald: "How Global Corporations Compound Hunger"; FFPNFP; Moyers, William and Haines, Pamela: "How We Cause World Hunger," WIN, Jan. 25, 1975.

MATERIALS: A film, a case study of poverty. Recommended:

- * "Flavio" - The tragic and tender story of young Flavio da Silva, a 12-year-old inhabitant of the Rio slums (12 minutes, B & W, rental $12.50 from Contemporary Films, Princeton Road, Hightstown, N.J. 08520).
- * "Land of the Brave" - depicts the face and voice of the poor in the U.S. today (8 minutes, color, free rental from the Campaign for Human Development, USCC, 1312 Massachusetts Ave., N.W., Washington, D.C. 20005); "Why Poverty?" Worksheet for each student.

PROCEDURE:

1. Show one of the above films, or another case study of hunger in the U.S. or another country.
2. After the film divide class into groups of five or six. Give each student "Why Poverty?" worksheet.
3. WHY POVERTY?

	Personal Ranking	Group Ranking
poor land and natural resources		
lack of education		
international trade policies and practices		
feelings of apathy and hopelessness		
exploitation and domination by others		
the colonial past		
the indifference of others		
overpopulation		
hunger		
wealth and power concentrated in the hands of a few		
dependency on other countries		
no job opportunities		
lack of personal initiative		
capitalist (profit-oriented) economic structures		
unrest caused by revolutionaries		

4. Ask students to rank causes of poverty according to their gravity for a country such as the one in the film and for an individual like the main character of the film. Have them mark ratings (1-15) in the first column. Allow about five minutes.
5. When each student has completed the task, ask groups to reach a consensus on the relative importance of each of the fifteen items.
6. When the groups have completed their tasks take a sampling of individual and group selections. Which items were ranked in the top three? Which items were the most difficult to place? Which caused the most disagreement within the groups? Which item was placed last? Why?
7. As individuals and groups offer their selections encourage them to be very critical and question their assumptions (e.g., with "Flavio": "Is Brazil really overpopulated?", "Is Brazil lacking in natural resources?"). Students will probably be unable to support many of their "feelings" about the causes of underdevelopment if the activity is used without much previous background. Use results of the exercise as springboard for research assignments and for further discussion.
8. Ask students to compare the process of individual decision-making with that of decision-making by consensus. What are the advantages of "seeking consensus" as opposed to individual decisions or voting? What are the disadvantages?

--Adapted from: "Why Underdevelopment?"
pp. 229-232, Education for Justice, Copyright
1975, Orbis Books, Maryknoll, N.Y. 10545

Activity Five

Population and Affluence

OBJECTIVE: To understand the relationship between personal values and policies dealing with world hunger. To clarify which values correspond most closely with the student's own.

BACKGROUND INFORMATION: "The Banality of Hunger," Frances Moore Lappé (FFPNFP); Moyer, William and Haines, Pamela: "How We Cause World Hunger," WIN, January 25, 1975.

PROCEDURE:

1. Divide class into groups of four or five. Read aloud several controversial statements concerning the roles of population growth and affluence in contributing to food scarcity.
2. SAMPLE STATEMENTS:
    - Future generations of Americans should not hope for or seek a higher standard of living. Instead we should be content to live a simple but comfortable lifestyle.
    - The world's population growth in the last few years is straining food resources. No couple should be allowed to have more than two children.
    - The U.S. has 6% of the world's population, but consumes about 30% of the world's resources. The wealthier nations of the world should share much of their wealth with developing nations.

- Efforts to lower population growth rate will be effective only as part of an overall assault on world hunger and poverty.
- About 7-8 pounds of grain protein are necessary to produce one pound of beef protein with present methods of raising livestock. Americans should reduce consumption of grain-fed meat to free grain for direct human consumption and demand grass-fed meat.

3. Have each group agree, disagree, or remain undecided on statements.
4. Tally the decisions of all groups on the board, and discuss.

Activity Six

The Real Energy Crisis is the Cow

OBJECTIVE: To compare and contrast food energy required to sustain a diet high in animal foods and a diet low in animal foods.

BACKGROUND INFORMATION: Lappé, Frances Moore: "The Banality of Hunger" FFPNFP; Lappé, Frances Moore: Diet for a Small Planet, pp. 7-14, 18-21, 43-55.

MATERIALS: Small foods for step 4; "Food Energy" Worksheet.

PROCEDURE:

1. Discuss the concept of the food chain. INTRODUCTORY COMMENTS: EXAMPLES OF FOOD CHAINS:

* Trophic Level	I	(Producers)	Plants
	II	(Primary Consumers)	People
* Trophic Level	I	(Producers)	Plants
	II	(Primary Consumers)	Cow
	III	(Secondary Consumers)	People
* Trophic Level	I	(Producers)	Plants
	II	(Primary Consumers)	Cow
	III	(Secondary Consumers)	Pig (which eats milk and dairy and meat scraps from table as part of diet)
	IV	(Tertiary Consumers)	People
* Trophic Level	I	(Producers)	Plants
	II	(Primary Consumers)	Small fish eats plants
	III	(Secondary Consumers)	Small fish eats insects
	IV	(Tertiary Consumers)	Large fish eats small fish
	V	(Quaternary Consumers)	Person eats fish

2. Have students name one food they ate that day and what trophic level he/she was eating at.
3. Discuss energy use at each level of the food chain. Introductory remarks: At each step of the food chain there is a ten-fold loss of energy. This is an approximate number since the efficiency of animals varies greatly. (See Chart 2 in Diet for a Small Planet.) Many animals eat plant or animal food which is unavailable or indigestible to humans. Although energy loss occurs at each step of the food chain, there

is a net gain since unusable foods are becoming partially usable. For example, when cattle feed on grass, they convert plants inedible by humans (usually grown on land unsuitable for other crops) to high-quality, edible food--meat and dairy products. But most cattle in the United States are partially raised on grain and other feeds, which could directly supply human food. This means a net loss of food energy available. There is tremendous use of land and loss of food energy to produce grain-fed beef.

4. To demonstrate the food chain concept, use small foods of like size. Measure them out to exemplify the food chain levels.
   *1,000 pea beans or pinto beans represents the food energy available from producers at the first trophic level.
   *100 raisins shows available food energy has decreased at the second trophic level.
   *10 peanuts shows energy has further decreased at the third trophic level.
   *1 pistachio illustrates the remaining energy at the fourth trophic level.

5. Distribute "Food Energy" Worksheet:
   HUMAN DIETS VARY CONSIDERABLY IN THE AMOUNT OF FOOD FROM ANIMAL SOURCES. CALCULATE:

DIET ONE: 50% OF CALORIES FROM ANIMAL SOURCES

Plant Energy Units

1,250 calories from animal sources x 10 = ______ calories

1,250 calories from plant sources x 1 = ______ calories

2,500 calories (TOTAL) = ______ calories x 4 billion = ________
Calories necessary to feed world's population on this diet

DIET TWO: 40% OF CALORIES FROM ANIMAL SOURCES

1,000 calories from animal sources x 10 = ______ calories

1,500 calories from plant sources x 1 = ______ calories

2,500 calories (TOTAL) = ______ calories x 4 billion = ________
Food energy calories needed to feed world's population on this diet

DIET THREE: 10% OF CALORIES FROM ANIMAL SOURCES

250 calories from animal sources x 10 = ______ calories

2,250 calories from plant sources x 1 = ______ calories

2,500 calories (TOTAL) = ______ calories x 4 billion = ________
Food energy calories necessary daily to feed world's population on this diet

MY OWN DIET

_____ calories from animal sources x 10 = ______ calories

_____ calories from plant sources x 1 = ______ calories

_____ calories (TOTAL) = ______ calories x 4 billion = ________
Food energy calories necessary daily to feed world's population on this diet

6. DISCUSS: Calories are a measure of energy, either food energy, or other kinds of energy, such as electrical, heat, etc. What other kinds of calories are used in producing your food? What would be the effect of reducing your consumption of food from animal sources? On yourself? On others? What are other good sources of protein? Which of the above diets do you think is a good goal?

Activity Seven

Feeding the World

OBJECTIVE: To identify effect of grain-fed cattle on world food supply.

BACKGROUND INFORMATION: Lappé, Frances Moore: "The Banality of Hunger," FFPNFP; Lappé, Frances Moore: Diet for a Small Planet, pp. 7-14, 18-21, 43-55.

MATERIALS: Large bowl of peanuts (60-100).

PROCEDURE:

1. Have 6% of the students in your class represent the United States. Have one person represent America's animals and get down on hands and knees to the side of U.S. students. Have the remaining students stand as a group apart from these students (or student depending on size of the group).

2. Bring out a bowl of peanuts or another treat students like.

3. Calculate 30% of the treat. Tell the students this represents America's portion of animal-origin food. Turn that amount over to the group representing the United States. (Have them wait to eat.)

4. Give the remaining 70% to the rest of the students. Let them divide it (unfairly as it would be worldwide). Have them wait to eat.

5. Have the United States buy some food from two people in exchange for some money. (Don't give the people any choice in the deal.) The amount bought is turned over to the animal.

6. Now that everyone has his realistic but unfair portion, have them eat. IMPORTANT: Do not give more food to anyone as this would spoil the effect of the game. If someone feels slighted, that's the way life is, and this should be pointed out.

7. DISCUSSION QUESTIONS: To the "United States" people: How did you feel as you ate your portion of food? To the others: How did you feel? How did everyone feel when the United States animal got its portion? What does this game tell you about relationships between countries and feeding the world? What would happen if the food was more evenly distributed? What would happen if we had the same amount of food but twice as many people? Will the United States continue to claim the same proportion of food as population increases? How is this game different from real world events?

Activity Eight

Developing Country -- Developed Country

OBJECTIVE: To compare food production and demand factors in developing and developed countries. To compare dietary intake in different countries. To correlate to the development process.

BACKGROUND INFORMATION: Transnational Institute: World Hunger: Causes and Remedies (available from Institute for Policy Studies, 1901 Q Street, N.W., Washington, D.C. 20036, $2.50); Lappe, Frances Moore: Diet for a Small Planet, "Earth's Labor Lost"; Brown, Lester: By Bread Alone; USDA House and Garden #72.

MATERIALS: "Population, Food Supply and Demand for Food in Individual Countries," p.185.

RESOURCES: Population Reference Bureau, 1755 Massachusetts Avenue, N.W., Washington, D.C. (Classroom resources with special emphasis on development: Intercom #69, "Development: New Approaches," Center for War/Peace Studies, 218 East 18th Street, New York, N.Y. 10003, $1.50; Focus on Global Poverty and Development, Overseas Development Council, 1717 Massachusetts Avenue, N.W., Washington, D.C. 20036, $12.00).

PROCEDURE:

1. Have students choose one developed country and one developing country from the table. (No two students should use the same countries.)
2. Have each student briefly research the two countries. (Use an encyclopedia or factbook.) Have them list key factors (historical, cultural, economic, environmental) which identify their countries as "developed" or "developing."
3. Discuss the meaning of the three growth rates. (Columns one through three in the table.) What other factors determine food demand besides population size? Discuss the consequences when each one of the growth rates is larger than the others.
4. Have students bar-graph the growth rates for Population, Food Production and Domestic Demand for Food for the developed country on one sheet. In a different color, have them graph the rates for the developed country.
5. In class: Write on one side of the board "Developing Countries" and underneath three columns: "Population," "Food Production," "Food Demand." Write on the other side of the board "Developed Countries" with the same three columns underneath. Ask the class: "For the developing country you graphed, how many students found the population growth rate to be higher than the other two rates? the food production growth rate? the food demand growth rate? Tally class findings on the board. Repeat procedure for developed countries. What patterns emerge? Can you generalize about trends in developed countries vs. developing countries? What are possible consequences of these trends? Which countries don't fit into overall patterns? Ask students who researched these countries to try to explain why.
6. Have students record their energy intake (in calories) and protein intake (in grams) for one day (they may have done this in the Nutrition Chapter Part A, Activity 3).

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7. Have students graph their own daily calories and the per capita calories in the two countries. (Have them draw a dotted line at 2,500 calories to show average daily requirements.) On a separate sheet have students graph the grams of protein per day per capita of the two nations and themselves.

8. Collect data for the class. Write on the board:

	Developed Country	Developing Country	Me
Energy (Calories)			
Protein (Grams)			

How many students found the highest average calorie intake in the developed country they studied? The developing country? Themselves? Mark these tallies in colored chalk. How many students found the lowest calories intake in the developed country? The developing country? Themselves? Mark these tallies in white chalk. Repeat process for protein.

9. DISCUSS: What are the effects of consuming more energy calories than we need? (on ourselves? on others?) Less than we need? What are the effects of consuming more protein than we need? Less? (EMPHASIZE THAT CALORIES AND PROTEIN NEEDS DO VARY SIGNIFICANTLY FOR EACH INDIVIDUAL. PRESENT CHARTS SO STUDENTS CAN FIGURE OUT THEIR PERSONAL NEEDS. EMPHASIZE THAT DATA ON INDIVIDUAL COUNTRIES IS ROUGH SINCE IT DOES NOT TAKE INTO ACCOUNT INDIVIDUAL DIFFERENCES:

* PHYSIOLOGICAL NEEDS MAY VARY CONSIDERABLY: AN ADULT NEEDS MORE THAN A CHILD; A PREGNANT WOMAN HAS SPECIAL REQUIREMENTS.

* AVAILABLE SUPPLY OF NUTRIENTS VARIES BY AGE AND SOCIAL CLASS. ADULTS OFTEN HAVE BETTER ACCESS TO SCANT SUPPLIES OF FOOD THAN CHILDREN OR OLD PEOPLE; THE RICH CAN OBTAIN MORE FOOD THAN THE POOR. IT WAS FOUND IN A REGION OF INDIA THAT LOW INCOME 13-YEAR-OLDS CONSUMED 1,100 LESS CALORIES PER DAY THAN HIGH INCOME 13-YEAR-OLDS (1,376 vs 2,485) AND 33.5 LESS GRAMS OF PROTEIN PER DAY (35.9 vs. 69.4).

* COMPARING THE AVERAGE NUMBER OF GRAMS OF PROTEIN DOES NOT ALLOW FOR DIFFERENCES IN THE QUALITY OF PROTEIN. MOST PEOPLE IN DEVELOPING COUNTRIES OBTAIN MOST OF THEIR PROTEIN FROM PLANTS AND MAY REQUIRE LARGER QUANTITIES THAN PEOPLE WHO CONSUME SOME ANIMAL PROTEIN.)

Activity Nine

What Are Your Priorities?

OBJECTIVE: To identify personal, national and international priorities for improving the quality of life. To examine the relationship between these sets of priorities.

MATERIALS: "Priorities Worksheet."

PROCEDURE:

1. Distribute "Priorities Worksheet."
2. Ask students to rank items in each category (PERSONAL, NATIONAL, INTERNATIONAL) according to which they think are the most or least important and should receive highest or lowest priorities.
3. DISCUSS: Which items were most (least) important to you at a personal level? National level? International level? Why? (ENCOURAGE STUDENTS TO EXPRESS THEIR PERSONAL OPINIONS AND THE REASONS FOR THOSE OPINIONS. THERE IS NO "RIGHT" ANSWER.) What relationship do you see if any between your personal priorities and your priorities for the nation and the world? (NOTE WHETHER THE PRIORITIES STUDENTS SET FOR THEMSELVES ARE CONSONANT WITH WHAT THEY SET FOR OTHERS.) Which set of concerns--national or international--should receive greater attention from our lawmakers in Washington? Should the United States be concerned about the problems of developing countries? Why or why not?
4. PRIORITIES WORKSHEET

Personal

________ A satisfying job

________ Good health

________ A lot of money

________ A good relationship with your parents

________ As much education as wanted or needed

________ A position of high status in the community

________ Many material possessions, including a big home

________ Much leisure time

________ A clean environment

________ A successful marriage with happy children

National

________ A strong military defense system

________ A clean environment

________ Elimination of poverty in the United States

________ Free education through college
________ Inexpensive medical care available for everyone
________ Reduction or elimination of crime
________ Improved public transportation systems
________ Space exploration programs
________ Income security for everyone, with jobs for all
________ Elimination of racism and discrimination

International

________ Slowing or stabilizing world population growth
________ Reducing the risk of war between nations
________ Maintaining clean air and water around the world
________ Reducing hunger and famine in developing countries
________ Raising world living standards
________ Making a high school education available to all
________ Reducing or banning nuclear weapons
________ Cooperating on global problems such as drug traffic and airplane hijacking.
________ Developing and utilizing the world's natural resources, including the oceans, on a more equitable basis

From Jayne Millar: "Setting Priorities Straight--What's Important?", "Teaching Toward Global Perspectives;' Intercom 73 (New York: Center for War/Peace Studies, 1973), pp. 23, 24. Reprinted with permission.

Activity Ten

Debates

OBJECTIVE: To identify and investigate controversial issues concerning the world food situation. To prepare an argument supporting a particular viewpoint.

PROCEDURE:

1. Supply students with a list of major controversies surrounding world food issues. EXAMPLES: "Green Revolution: Success or Failure?" "Food Politics vs. Food Aid," "Source of Scarcity: Population or Unequal Distribution?","Population Control: Family Planning or Social and Economic Development?"
2. Divide class into groups of 8 or so students. Within each of these groups, form two subgroups.
3. Ask each group to pick a debate issue. Ask each subgroup to choose a position to research and argue.
4. Provide research time and group meeting time for all debate subgroups. Schedule debates for different days.

5. A useful debate procedure:

   A. Each group states the position they represent (short, basic facts, 2 min. each: 4 min.)

   B. Each group emphasizes their position (state facts and supporting evidence strongly and at length, 5 min. each: 10 min.)

   C. Each group has five minutes to ask other group questions. 10 min.

   D. Open questioning for ten minutes. 10 min.

   E. Final summary (each group pulls case together) or general class discussion. 10 min.

   (SUGGEST THAT ALL MEMBERS OF SUBGROUPS PARTICIPATE IN THE 5-STAGE DEBATE. THIS PROCEDURE MAY NEED MODIFYING FOR YOUR CLASS MEETING TIME, BUT IT ALLOWS IN-DEPTH EXPLORATION OF A CONTROVERSIAL ISSUE, WITHOUT BEING ONE-SIDED.)

Activity Eleven

World Food: Action Choices

OBJECTIVE: To select one course of action on food problems from several alternatives. To identify costs and consequences of actions.

MATERIALS: "World Food--Your Action Profile" and "Scoresheet" for each student.

PROCEDURE:

1. "WORLD FOOD--YOUR ACTION PROFILE"

   SITUATION ONE: The daily newspapers report immediate food shortages in many parts of the world, with the very real threat of mass starvation and malnutrition.

   YOU WOULD:

   P-1: Send a donation to a food aid organization. ________
   P-2: Join a chapter of a world food organization or local study group in your community. ________
   C: Organize a series of fundraising campaigns, educational events and study groups on world hunger in your community. ________
   S: Take no personal action, since you are not responsible for hunger in other parts of the world. ________
   N: Help organize a national letterwriting and lobbying campaign to Congress demanding increased food and development aid to needy nations. ________

   SITUATION TWO: Many newly developed grains and cereals have not succeeded in countries which desperately need them. Authorities believe this is largely due to lack of low-cost, oil-based fertilizers.

   YOU WOULD:

   P-1: Stop using fertilizer on your lawn and garden. ________
   P-2: Organize an organic garden in your community. ________
   C: Pressure city officials to transform the local sewage treatment

plant into a source of organic fertilizer (this has been successfully done in many cities, thus reducing local use of oil-based fertilizer). ______

N: Strongly urge your Senator to introduce legislation banning the use of oil-based fertilizers for anything other than agricultural production. ______

SITUATION THREE: You have just learned that cattle raised in feedlots require large quantities of feed grains; this grain could be used directly for human consumption, feeding millions more people.

YOU WOULD:

P-1: Eat less (grain-fed) meat and explore other methods of obtaining a well-balanced diet. ______

P-2: Eat less (grain-fed) meat and send money saved to a food aid organization. ______

C: Urge the PTA or school board to increase quality nutrition education in schools. Insist that it include the knowledge necessary to insure a balanced, nutritious, low-meat diet. ______

S: Continue your present diet since this is a personal choice and has no effect on the welfare of others. ______

N: Actively urge national legislation which stipulates that a given amount of grain be earmarked for donation or sale on favorable terms to needy nations. ______

SITUATION FOUR: Recent testimony at Congressional Hearings on multinational corporations has exposed Alpha, a large company owning much land in poor countries, for contributing to hunger in these nations by using resources for its own profit rather than the welfare of all the people.

YOU WOULD:

P-1: Stop buying Alpha's products. ______

P-2: Urge family and friends to stop purchasing Alpha's products and write letters of protest to the firm. ______

C: Pressure city officials to ban purchase of Alpha's products by any public institutions: schools, hospitals, government buildings, etc. ______

N: Actively support national legislation limiting the expansion of Alpha and other multinational corporations so as to stop exploitation of the poor in other nations. ______

2. SCORESHEET:

Your World Food Cents Profile:

P-1 Total: ____ x 1 = ______
P-2 Total: ____ x 10 = ______
C Total: ____ x 100 = ______
N Total: ____ x 1000 = ______
GRAND TOTAL: ______

Your World Food Sensitivity Profile:

S-2: ______
S-3: ______
TOTAL: ______

3. Distribute "World Food--Your Action Profile" and "Scoresheet" to each student.
4. Instruct students to read each situation carefully and rank possible actions according to which they would be most likely to do, and which they would be least likely to do. (MANY OTHER ACTIONS ARE, OF COURSE, POSSIBLE BUT FOR THE PURPOSE OF THIS ACTIVITY ASK THEM TO RATE ONLY THE ACTIVITIES INCLUDED ON THE SHEET.) Instruct students to mark the action they would be most likely to do with a value of 4; mark the next most likely, 3; the third choice, 2; and the least likely, 1. When there are five choices (in situations one and three) one action should receive a 0.
5. Have students pair off and discuss their reasons for their ratings in each situation.
6. Have students fill out the scoresheet in the following manner: Add all P-1 values and obtain a total. Record on sheet. Do likewise for P-2, C and N. Mark the totals in proper place on the graph. Join the dots to form a line graph.
7. Ask students if they can surmise what P-1, P-2, C and N stand for. (P-1 represents personal actions; P-2 represents more involved personal actions; C represents community actions and N represents national-level actions.) Explain that their graph is a personal "World Food Action Profile," and its results demonstrate on what level--personal, community, national--they would most likely work to solve the world food problem.
8. To calculate World Food Cents Profile: Have students multiply totals by indicated values. Add these numbers for a grand total. Place a dollar sign before this number. It is a rough estimate of the relative amount of money required for their actions, and is some indication of the relative effectiveness of solutions.
9. To calculate "Your World Food Sensitivity Profile": Have students add S values (Situations one and three). How many students have a total between six and eight? four and five? one and three? 0? The higher the value, the less the student feels actions to alleviate world hunger are his/her personal responsibility.

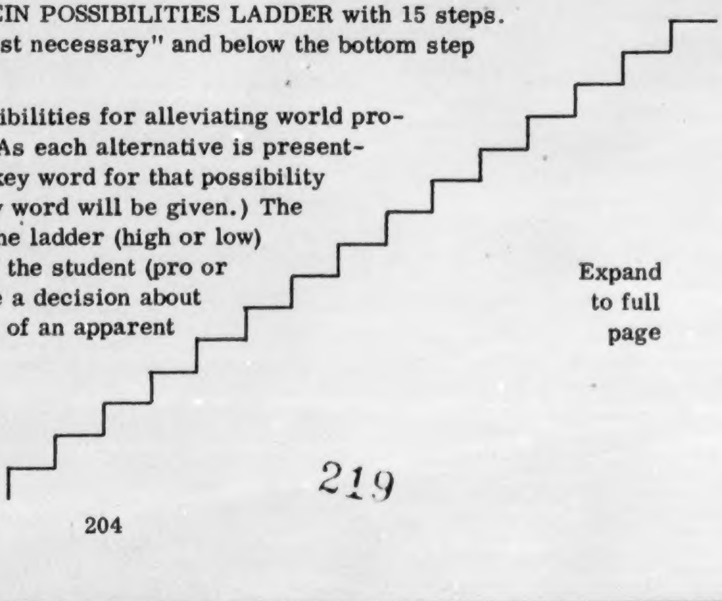
Activity Twelve

Protein Possibilities

OBJECTIVE: To identify the most feasible means of improving the world food situation.

PROCEDURE:

1. Have students draw a PROTEIN POSSIBILITIES LADDER with 15 steps. Above the top step write "Most necessary" and below the bottom step write "least necessary."
2. Explain that a list of 15 possibilities for alleviating world protein problems will be read. As each alternative is presented, have students place the key word for that possibility on one of the steps. (The key word will be given.) The location of the key word on the ladder (high or low) will depend on the feeling of the student (pro or con). The student must make a decision about each alternative, regardless of an apparent agreement with all,



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or apathy towards some. The student may change the placement of items on the ladder as new alternatives are presented (by crossing out, drawing arrows, etc.).

3. List of Protein Possibilities:

Protein Possibilities Ladder Alternatives and Key Words

- People in developed countries consuming less grain-fed meat and obtaining more of their protein from plant food combinations. (LESS MEAT)
- Sending food to developing nations in crisis situations. (SEND FOOD)
- Contributing money to needy countries to develop and implement better methods of food production. (MONEY)
- An international policy which involves extensive education in population control. (POPULATION)
- Training programs for people in developing countries to use skills and knowledge to modernize agricultural methods. (EDUCATE)
- Sending equipment and fertilizer to needy areas. (EQUIPMENT)
- Increasing research to improve the nutrition and durability of grains. (RESEARCH)
- Independent companies selling cattle, chickens, grains, or other food to developing nations. (SELL FOOD)
- Developing unused land areas (swamps, mountains, deserts). (LAND USE)
- Expanding programs to build roads and warehouses. (BUILD ROADS)
- Increasing use of peanuts and soybeans to make meat analogs. (MEAT ANALOGS)
- Fortifying existing foods with additional protein. (FORTIFY)
- Increasing fish farming. (FISH FARMING)
- Redistributing land ownership to majority of people in developing nations. (LAND OWNERSHIP)
- Allowing desperately starving people in developing nations to die without food assistance while sending food to nations whose people have a better chance of survival. (TRIAGE)

--Reprinted from "Protein Power," Massachusetts Department of Education, Bureau of Nutrition Education and School Services, Boston, Massachusetts 02111

Activity Thirteen

World Hunger Meals

OBJECTIVE: To prepare a meal using complementary protein theory. To identify important issues of world hunger, and prepare an educational program.

BACKGROUND INFORMATION: Diet for a Small Planet (Introduction), Frances Moore Lappé.

RESOURCE: OXFAM-AMERICA (302 Columbus Avenue, Boston, Mass. 02116) for specific information on hunger banquets.

PROCEDURE:

1. (A HOME ECONOMICS CLASS AND A SOCIAL SCIENCE, HUMANITIES OR CONTEMPORARY PROBLEMS CLASS SHOULD DO THIS ACTIVITY AS A JOINT EFFORT.)
2. Have the classes plan two fundraiser teach-ins. The theme of the first: "What Is World Hunger?"; the theme of the second: "Simplifying Our Diets."
3. Half of each class should plan the first teach-in meal; the rest should plan the second teach-in meal.
4. For "What Is World Hunger?" have students prepare a hunger banquet, highlighting global inequity and maldistribution of resources. Prepare rice with a little soy sauce and water for 70% of those attending, representing poor nations. Prepare a three-course meal, with meat as the main dish, for 30% of the people, representing the affluent nations. Have students provide a fact sheet detailing the actual global distribution of food resources. Have students plan a follow-up discussion with a film or speaker.
5. For "Simplifying Diets" have students prepare a meatless meal using complementary proteins. Have students prepare a fact sheet comparing U.S. food consumption with that of developing nations. Also include an explanation (and examples) of complementary proteins. Students should conduct a follow-up discussion and provide a film or speaker.

Activity Fourteen

The Reality of Hunger -- Get the Message Out

OBJECTIVE: To express the reality of hunger.

PROCEDURE:

1. Have students choose one of these three options, or a different expression of their own choosing.
   - A. Create a poster on World Hunger. Design the single image which would elicit a deep response from passers-by. What words, if any, would appear on the poster? What is the specific goal of the poster? (e.g. advertising an event such as a teach-in, hunger lunch, benefit performance; advocating a personal action such as eating lower on the food chain; promoting membership in a World Hunger Organization; stimulating personal reflection on World Hunger). The important part of this activity is not the artwork but the communication skill of creating an effective poster.
   - B. Create a collage: The Faces of Hunger/The Faces of Affluence. Use photos, drawings, newspaper headlines, and clippings. Display in public place.
   - C. Prepare a one-page fact sheet on world hunger. Construct clear, simple arguments, using carefully selected facts. The purpose of the sheet is to stimulate new interest and awareness in readers about world hunger. Distribute to libraries, church groups, adult education centers, other classes, women's and men's groups. Ask your clergyman to consider a sermon around it. Ask your town newspaper editor to write an editorial from it; ask your principal to arrange an assembly around it.

Activity Fifteen

Charity or Justice?

OBJECTIVE: To distinguish between charity and justice. To assess the views of organizations concerned with world hunger. To discern whether these organizations work for charity or justice.

MATERIALS: Brochures, articles, brief passages from various world hunger organizations. (Names and addresses for many groups are listed in FFPNFP, under the headings "World Food and Development Research, Analysis, and/or Lobbying," "International Development Projects," "Relief Agencies," pp. 456-460.)

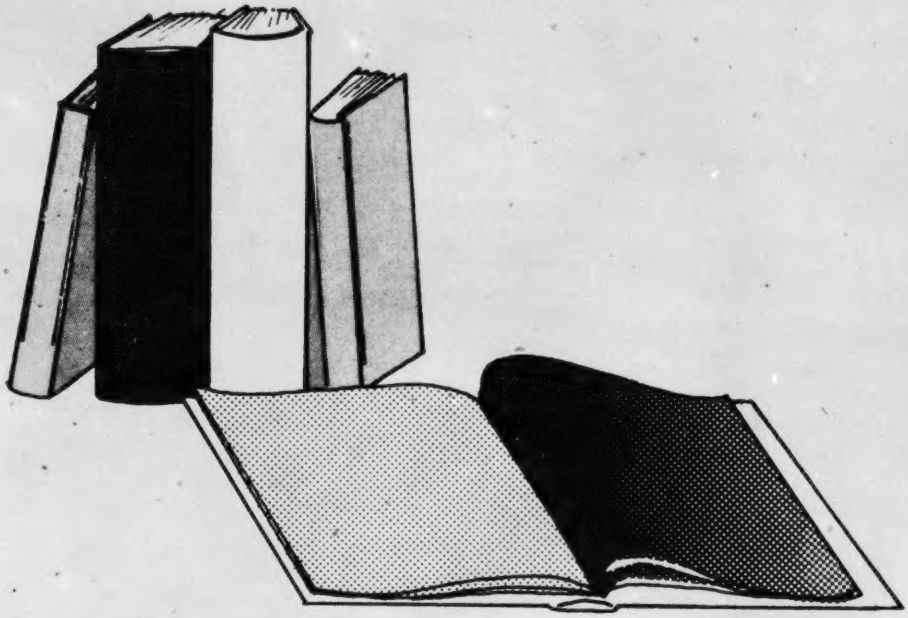
PROCEDURE:

1. In preparation for this activity send a form letter to various organizations concerned with world hunger. Ask groups to send a brochure or statement relating their major actions and goals concerning world hunger. Examine materials as you receive them, noting their actions and goals.
2. Assemble materials from five or six organizations into a "packet" and prepare one "packet" for each group of four or five students. Each packet should contain a variety of groups with different philosophies, actions and goals, if possible.
3. DISCUSS: What is Charity? What is Justice? What are the differences? (One theologian describes charity thus: "It is given in the case of accidental events, such as natural disasters. It is spontaneous, offered as relief. It is temporary, not addressing long-term solutions to a problem. It is non-controversial." Another clergyman, Archbishop of Recife, Brazil, Dom Helder Camara, represented developing countries when he said, "We don't want your help, we want your justice.") Quotations, Biblical citations, and dictionary definitions may be used to discuss charity and justice. Can you think of people in history or in stories who gave charity? Who worked for justice? In what kind of situations are these different actions appropriate? Has anyone in the class given charity? Has anyone worked for justice? When? How? Why?
4. Have students consider the difference between charity and justice vis-a-vis world hunger. What kinds of actions on the part of citizens or groups from developed countries would be charitable? What kind of actions would comprise an effort for justice? Which actions do you more fully support? Why?
5. Ask students to form small groups of four or five. Give each group a packet of statements, brochures or short articles for world hunger organizations. Have students discuss for each organization: Is their main goal charity or justice? Identify key words and passages which justify your decision. Which group's efforts do you most fully support? If you were to support some of these groups actively, through donations, fund-raising actions or formation of a local chapter, what else would you like to know about their views? actions? use of funds? goals?
6. Follow Up: Groups should write a brief (one paragraph) description of each world hunger organization--its stated goals and major actions.

7. Have interested class members form an action committee. The committee should write a form letter to all the world hunger organizations evaluated by the class. Ask them how much of their budget goes directly into aid? (food aid? development aid?) How much into education? How much into overhead? salaries?

8. Have action committee assemble this information and the critiques written by the class. Add a short introduction highlighting the problems of world hunger, and focusing on the distinction between charity and justice. Reproduce copies and distribute at local churches and synagogues.

SELECTED READINGS



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Center For Science in the Public Interest

Center for Science in the Public Interest is a non-profit, tax-exempt organization that is concerned with the impact of technology on society. It is funded through the sale of reports, private donations, and foundation grants.

CSPI's Nutrition Action Project seeks to provide the public with reliable, interesting information about food, the food industry, and the government regulation of foods.

Other Publications Available From CSPI

CSPI has published a number of books, reports, and posters that may be of interest to readers of this book. The publications of the Nutrition Action Project are different from most other food information materials because they have been prepared by a public interest group not beholden to any food manufacturer, trade association, or government agency. The only bias is one that favors the consumer. Brand names are mentioned. The publications are good antidotes to food advertising. Proceeds support the non-profit CSPI.

Creative Food Experiences for Children, by Mary Goodwin and Geraldine Pollen (1974), 191 pages, illustrated.

A resource book on nutrition and foods for all adults who care about what children eat and want to know what to do about it. The book is a goldmine of activities, games, facts and recipes that make nutrition and food a lively and exciting topic. Especially valuable for:

- elementary and junior high teachers
- Head Start and day care teachers
- producers of children's TV shows
- 4-H and Scout leaders, camp counselors
- nutritionists
- parents

Available in quantities:	1- 9 copies	$4.50 ea.
	10-49 copies	4.00 ea.
	50 or more	3.50 ea.

(plus shipping)

Nutrition Scoreboard, by Michael Jacobson (1975), 213 pages.

This book offers an in-depth discussion of nutrition, including the functions of major nutrients and the association between diet and degenerative diseases. The unique aspect of this book is that foods are assigned a single numerical rating based on their content of protein, vitamins, minerals, fiber, fat, and sugar. For example, a glass of orange juice has a score of 62, while a bottle of soda pop rates -92. Nutrition Scoreboard is published by Avon Books and can be purchased at bookstores for $1.75 or from CPSI for $1.75 plus 50¢ for postage and handling.

Food Scorecard, by Michael Jacobson, Ph.D. (1974), 32 pages, illustrated.

This adaptation of Nutrition Scoreboard is intended for use by children 9-13 years old. This delightful booklet discusses nutrition and food categories (beverages, protein foods, soups, etc.) with "scorecards" for foods in each category. Special attention is given to snack foods and the influence of food companies' advertising in shaping our diets. A teacher's guide, sent with every order, suggests uses, games, activities to complement the booklet. Sold only in bulk.

20-99 copies	35¢ ea.
100-999	30¢ ea.
1000-2499	25¢ ea.
2500 or more	23¢ ea.

(plus shipping costs)

Changing American Diet (1978) 91pages.

This reference book documents changes in the American diet over the last 70 years. Included are 43 graphs. $2.50 per copy.

From the Ground Up: Building a Grassroots Food Policy (1976), 140 pages.

This book, originally developed for Food Day organizers, is a manual on how to change city and state policies pertaining to food. The manual includes chapters on working for effective nutrition education programs, forming co-ops and buying clubs, repealing a state sales tax on food, making full use of federal food programs, and getting good food into--and junk foods out of--vending machines. $2.50 per copy.

Food for People, Not for Profit (1975), edited by Catherine Lerza and Michael Jacobson.

The official Food Day handbook is an anthology that includes chapters on nutrition, world food problems, domestic hunger, government policy, food costs, the food industry, and action ideas. It also has a comprehensive introduction by the editors, film and book lists, lists of organizations, and a preface by Ralph Nader. Food for People is published by Ballantine Books and can be purchased at bookstores for $1.95 or from CSPI for $1.95 plus 50¢ for postage and handling.

How Sodium Nitrite Can Affect Your Health (1973), by Michael Jacobson, Ph.D., 55 pages, illustrated.

A critical examination of the controversy surrounding the additive sodium nitrite, which is used in bacon, hot dogs, luncheon meats, and cured fish. The report discusses the function of nitrite, the hazard it poses, alternatives to its use, and the failure of government agencies to restrict use of nitrite. $2.00 per copy.

White Paper on Science Museums by Howard Learner (1979) 56 pages.

This report based on a six-month nationwide investigation, looks at the objectivity and freedom from bias of science museums. It encourages science museums to shake lose from corporate domination, and to present more than one side of an issue.$4.00 ea.

Chemical Cuisine Poster (1977) 18x24. This informative poster lists over 50 food additives, identifying each by its function, the processed foods in which it is found, and a clear statement of whether the additive is dangerous, suspicious, or safe.

Great American Eating Guide Poster (1979) 18x24. This eye-catching chart lists foods as eat "anytime,""in moderation," and "eat now and then." Also given are brief tips about snacks, cooking healthfully, and substitutes for salt and food additives.

Nutrition Scoreboard Poster (1974) 18x24. A beautiful, brightly colored poster with nutritional ratings for over 200 foods. Perfect for classroom wall or refrigerator door.

1-9 posters	$2.00 ea.
10 or more	1.50 ea.

Nutrition Action

A monthly magazine full of ideas for solving food problems in your community. Articles cover such issues as getting wholesome food in vending machines, publicizing food stamps, world hunger, city food policies, nutrition education, as well as book reviews, editorials, resource lists, etc. One year subscription - $10.00.

Food: Where Nutrition, Politics and Culture Meet: An Activity Guide for Teachers.

Additional copies of this book are available.

1-9 copies	$4.50 ea.
10-49 copies	3.75 ea.
50 or more	3.00 ea.

(plus shipping costs)

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Washington, D.C. 20009

From the Preface:

"For here, at last, is a book full of instructive things to do, designed for those who have suspected all along that the field of food and nutrition was about something more interesting, more complicated, and more controversial than two handsful of vitamins and minerals, a few exotic deficiency diseases, and four increasingly irrelevant food groups."

"The principal bias of this book is not toward a single point of view about food or where it comes from. The principal bias of this book is towards investigation followed by action. It aims at nothing less than teaching students to think for themselves about the forces in society that determine both the choices they make and the choices they have available to make."

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